An Address
ON
THE RESISTANCE OF THE HUMAN BODY TO DISEASE.

DELIVERED TO THE SHROPSHIRE AND MID-WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION,
BY
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I FEEL that the position of President this year is more onerous and responsible than usual. For it is certain that we are on the threshold of great changes, and that the next twelve months will in all probability be a critical period for our profession.

If the National Insurance Bill passes in anything like its present form[1] we shall be fighting for the honour and independence of our profession—some of our members even for their very existence as medical men; and probably many meetings will have to be held and careful consideration will be necessary of the weighty questions that are certain to arise in order to deal with them wisely. For one thing the struggle on the vital question of a wage limit is only postponed. Its scene is, however, shifted from the House of Commons to the local Insurance Committees, upon which we were promised proper representation.

May I therefore take this opportunity of reminding you that we dominate the situation, but upon one condition only—namely, that we are united. By union alone can we strengthen the hands of our Representatives. Their influence will be great in proportion as they feel that they have a united profession behind them; and judging from the tone of the meetings held in this room hitherto, I think there can be no doubt about the unity of the profession in the area covered by this Branch of the Association. I feel that my position is made lighter somewhat by this circumstance, and, busy though the year is almost sure to be, I hope to come here and give what assistance I can to this particular work.

The resistance of our bodies to disease is a subject that we know very little about positively; but in these days, when, as it appears to me, there is a widespread nervousness in regard to disease, and especially infectious disease, it is well that we ourselves should remember that there are such things as defences in our bodies; and perhaps by impressing upon our patients saner views in regard to disease we might enable them to face illness with a more equable and confident spirit—a condition we are always happy to meet with, and upon the advantage of which I am sure I need not dwell.

I cannot pretend to deal in any detail with so vast a subject. It would be absolutely impossible for me, in my position, to bring before you the latest ideas about it; my object is rather to direct attention to certain general aspects of it—no doubt familiar to every one here, but not the less interesting, in my judgement, for being well known. You will pardon me, therefore, if very often "I tell you that which you yourselves do know," and I trust you will bear in mind that the remarks are those of a member of the humblest order of the profession—a country general practitioner—on a difficult subject, made in the presence of men many of whom are older, abler, and of much wider experience than himself.

At the outset I wish to make it quite clear that I am not considering the question of immunity, although there is no doubt that the important experiments that are daily being undertaken in regard to immunity must go a long way to clearing up the question of the resistances to disease. Immunity may be defined as the power to repel the agents of disease, where the enemy has found the position too well entrenched and has retired—for the time at least. Resistance is the power to deal with the agents of disease when they have obtained a foothold, where the enemy has carried the outer entrenchments and the real struggle has begun. To carry on the illustration, possibly one may suggest that there is a later stage where the enemy has been defeated in a measure, but the damage inflicted has been serious and another process is brought into play—namely, the power of compensation, instances of which will at once suggest themselves.

Both immunity and resistance are found, of course, in connexion with agents of disease coming from outside. The diseases which are caused by agents outside our bodies are increasing in number. Besides all the old and well-known infections there are the various invasions of the pneumococcus which are being revealed to us, and those of the *Bacillus coli;* and many, if not most, catarrhal affections, such as tonsillitis and troubles in the upper air passages, probably depend upon micro-organisms, though not always of a specific kind. Besides, many observers are thinking that acute rheumatism may be a bacterial affection and that rheumatoid arthritis certainly is; and this is not unlikely when we remember that we have a bacterial arthritis already in the form of gonorrhoeal rheumatism; also there are various forms of intestinal intoxications, and so on, about which little is known, but which nevertheless undoubtedly exist, and are probably due to some form of bacterial agency.

I speak of disease agents, not diseases; we are too apt, I think, to regard diseases as entities—things that are definite and, I had almost said, concrete, not, of course, as contrasted with abstract, but rather as things with boundaries, and circumscribed; whereas disease ought to be regarded as a particular condition of the individual, due to certain agents and modified by certain conditions. And as bearing upon this view I would like to direct your attention to the well-established fact that particular bacilli do not always cause the same symptoms. The pneumococcus does not always cause croupous pneumonia, and we are all familiar with the protean characters of conditions due to the influenza bacillus and the *Bacillus coli.*

This address is concerned mostly with diseases that have their origin in outside agencies, but may I note in passing that even in cancer—though I admit its origin is quite uncertain—resistance is marked even to the point of occasional spontaneous disappearance, as vouched for in the recent addresses on the subject given by Professor Gilbert Barling and Sir A. Pearce Gould? Yet our knowledge of living agencies as a cause of disease is very recent. In fact, bacteriology as a science has been in existence for not more than thirty years, but during that time its progress has been rapid. Sir Henry Holland, in 1839, suggested that the source of epidemic disease was animalcule life, and J. K. Mitchell, of Philadelphia, in 1847 advanced facts and arguments in favour of the cryptogamic origin of malarial and epidemic fevers. Probably the theory was advanced even considerably earlier; but in the 1877 edition of Roberts's *Medicine,* then one of the favourite textbooks of medicine for students, the only organism that was generally admitted to be a cause of disease was the spirillum of relapsing fever. Still the idea of germ diseases was getting more widely accepted, though it was on the surgical side that the advance came, through the teachings of Lister; and microscopic research, with improved methods of staining and ways of cultivation of micro-organisms, has been constantly adding to our knowledge of this class of diseases.

Now, the germ theory having been accepted, it was hoped by many that we should be able to manage disease better as we knew more about the cause. Was the hope realized? Did our treatment of disease alter very much, and were we more successful? Surely it was not so; and after a while the reason began to show itself. The problem was not so simple as it appeared. In the first place it was not easy to destroy the germs without injury to their host, and in the case of some bacilli, though they could be easily killed, their spores had wonderful vitality. Then further research showed that ill effects mainly depended upon what we call toxins, substances formed by the bacilli in the blood, or locally, and afterwards absorbed into the blood.

In spite of all these difficulties, which we now begun to see, and which, of course, had always existed, people recovered even in what seemed to be desperate conditions, and the question was and is, Why?

The only answer that can be given is that there is a resistance of some sort—a system of defence—in our bodies. And even in past times we were wont to hear such expressions as "Natural tendency to recovery," *vis*

[1] The address was delivered in November last.

medicatrix Naturae, or a phrase that the late Austin Flint of New York was very fond of, "Self-limitation of disease"; all of which I take to mean that the older physicians and surgeons were conscious that many cases recovered in an inexplicable fashion—that, at any rate, the recovery did not seem to be due to the treatment employed. Some power was there that was beyond their ken—an unknown agency was fighting for the patient's recovery.

And do not most of us see the same thing to-day? I know I do. In a large practice for thirty years among all sorts and conditions of men, women, and children—from those who live in the lap of luxury down to those who often are without the bare necessaries of life—nothing has impressed me more than the power of recovery that seems innate in human beings. I see a young patient with pneumonia, living miles from me in the country, in bad surroundings and ill-ventilated rooms, with no nursing, with discomfort of every kind, and irregular feeding, a case whose circumstances preclude the possibility of employing anything but the most simple treatment—everything, so to speak, against it; and yet—and yet—it recovers. And not only an odd case here and there, but scores. The same result happens in measles, scarlet fever, and other affections, where cases recover without any care being taken of them. Further, what are we to make of the fact that many methods are advocated for treating a particular disease, and all, according to those who employ them, equally efficacious. Look at the results that have been revealed to us by *post-mortem* examinations regarding tubercle—cases of people with healed cavities and other evidence of tuberculous disease who have died of something else, and who, we may be sure, did not all recover from their tuberculous attacks under one and the same method of treatment. The inference usually drawn in such cases is that tubercle is a curable disease, that people recover from a condition at one time considered to be nearly if not quite hopeless. But I think the inference can be drawn wider, and we may say that tubercle is not likely to be an isolated instance, but is one of many diseases to which there is in our body great power of resistance. So that the conclusion must be this, I think: That a human being in normally good health is really very resistant to disease, that there is some dormant power in us ready to do battle if called upon. But the How and the Why are still obscure.

Where does the power of resistance reside? How is it to be evoked? These are the questions that for us have the greatest practical importance. There are certain outer defences that we know well. For instance, the healthy unbroken skin is the first external line of defence, and no doubt a perfectly healthy mucous membrane is another. It is at least to many bacilli—certainly the *Bacillus coli*; this seems to be the opinion of the speakers in the Section of Pathology at the recent Birmingham meeting, where stress was laid upon such conditions as constipation, diarrhoea, colitis, stercoral ulcer, and intestinal parasites (such as the hook worm of South America), as favouring the passage of the *Bacillus coli* into various parts of the body; and I would suggest that a healthy mucous membrane is probably a great protection against tubercle, whether the bacillus enters through the pulmonary or intestinal surfaces. Many cases of pulmonary tubercle follow upon influenza, measles, catarrhal pneumonia—all, be it noted, catarrhal diseases in which the mucous membrane is in an abnormal condition for some time. And in past time phthisis was often traced or rather set down to repeated colds. Is it not likely that the local resistance is lowered by the catarrh and the bacillus finds a comparatively easy entry? However, having by some means got through the first line of the outer defences, the invaders find themselves confronted with the local defences, the various resistances of the tissues, and either produce local diseases or pass into the lymph or blood stream and are carried to various parts of the body.

One of the local defences is the process of inflammation (that word of awful import to the average lay mind), the phenomena of which I need not go into. But I may mention in passing that Sir Watson Cheyne has some doubt whether the leucocytosis that accompanies the early stage of inflammation is quite as important as most men believe, holding rather that the essential resisting power of a part to local infection lies in the tissue cells than the adventitious leucocytes which come into it subsequently. Generally speaking, however, a local abscess is the result, and it appears that several micro-organisms have the power of setting up suppuration—the pneumococcus, for instance, as well as the *Bacillus coli*, besides of course the usual pus-producing organisms. As a good example of local resistance there is the abscess found in cases of appendicitis, which localizes the disease, and the failure to produce which results in the many fatal cases of general peritonitis that happen in connexion with appendix inflammation.

But what are the ways in which the various acute infective diseases are resisted? What, so to speak, are the inner lines of defence? Here we are on very uncertain ground, nearly everything being a matter of theory. The researches and experiments of Sir Almroth Wright and his pupils on the opsonic content of the blood and the opsonic index will no doubt help us, but light is coming very slowly. Sir Watson Cheyne states "that the conditions summed up under the term 'local resisting powers' are much more important than the general conditions seems quite certain." Still the general ones must be of very great importance, because one cannot help remembering that there are a large number of general infective diseases with which we are constantly meeting. It is probable, possibly certain, that some of them are local to start with, though we only really know them when generalized (diphtheria, for instance), but there does not seem to be any local resistance to most of them; and if there were no general resistance surely the mortality would be greater. Is there anything known as to what goes on in the body while it is fighting these? In some, if not most, there is leucocytosis. Is it defensive? A few facts bearing on this point may be mentioned. Sir W. Cheyne states that the mortality in infantile erysipelas is at least 50 per cent., and that the mortality steadily falls in older children. Further on he states that, "leaving out the first year of life, there seems to be a slight increase of leucocytosis in children under ten years of age as compared with adults in some of these infective conditions."

Besides, I find in the article on the "Clinical Examination of the Blood," in Allbutt's *System of Medicine*, first edition, by S. M. Copeman, that leucocytosis has been found in many acute infectious disorders, more particularly small-pox, scarlet fever, diphtheria, pneumonia, acute rheumatism, anthrax, erysipelas, and perhaps in measles. This was years ago, and no doubt additions and corrections have been made since then. In typhoid it was doubtful in the absence of complications. Regarding pneumonia it is stated that "it is so well marked as to afford valuable aid in the diagnosis and prognosis of the disease. Certain kinds of the leucocytes are increased, beginning with the rise of temperature, and, excepting cases of extreme gravity, this continues and increases up to the crisis, at which stage a well-marked leucocytosis is a favourable sign. On the other hand, if leucocytosis is absent or ill-marked the case will probably end in death." And it is stated that the same kind of information can be obtained in scarlet fever and other diseases. I do not know if these phenomena have been steadily followed up or not. But, curiously enough, it is stated also that leucocytosis is not apparent in tubercle. Whether this statement, which does not accord with the latest observations, is due to the difficulty of deciding what increase in the leucocytes is to be regarded as a leucocytosis I cannot say, but as the normal number of leucocytes is given as varying from a minimum of 6,000 to a maximum of 10,000 per c.mm. of blood, it is a possible explanation. But the very latest account of this subject that I have come across is a report of some observations by Dr. F. A. Craig, of the Phipps Institute, on 100 consecutive cases of phthisis. It is published in the *Journal of Clinical Research* for October last:

STAGE I.—Slight initial lesion in the form of infiltration limited to the apex or a small part of one lobe. No tuberculous complications. Slight or no constitutional symptoms. Slight or no elevation of temperature or acceleration of the pulse at any time during the twenty-four hours, especially after rest. Expectoration usually small in amount or absent.

STAGE II.—No marked impairment of function, either local or constitutional. Localized consolidation moderate in extent, with little or no evidence of destruction of tissue or of disseminated deposits. No serious complications.

STAGE III.—Marked impairment of function, local and constitutional. Localized consolidation intense; or disseminated areas of softening; or serious complications.

The majority of the cases examined came under the heading of Stage III. The following is a summary of the average blood counts:

Average Blood Counts according to Stages of Phthisis.

	Stage I.	Stage II.	Stage III.
Haemoglobin	58 %	68 %	63 %
Colour index	0.65	0.72	0.67
Red corpuscles	4,481,500	4,737,000	4,667,000
Leucocytes	9,440	11,385	15,000
Differential leucocyte count:			
Lymphocytes	20.8 %	12.7 %	9.5 %
Large mononuclears ...	13.8	12.2	7.6
Transitionals	7.9	6.4	8.6
Polymorphonuclears ...	54.6	64.8	72.2
Eosinophiles	2.3	3.4	1.8
Basophiles	0.6	0.5	0.3

The two main points upon which it seems that stress can be laid are (1) the earlier the stage the fewer the leucocytes, (2) the earlier the stage the more numerous the lymphocytes and mononuclears and the fewer the polymorphonuclears; whereas conversely the later the stage the more numerous the polymorphonuclears and the fewer the lymphocytes.

In regard to the changes that the blood undergoes whilst a patient who is under observation either improves, remains stationary, or gets worse, the following average figures for a series of cases is full of interest:

Average Blood Counts in Case of Phthisis in Stage III according to the Subsequent Progress of the Case.

	Much Improved.	Improved.	Stationary.	Worse.
Haemoglobin	56 %	65 %	58 %	62 %
Colour index	0.52	0.70	0.67	0.66
Red corpuscles	5,408,000	4,614,000	4,326,000	4,728,000
Leucocytes	11,650	13,390	16,280	15,990
Differential leucocyte count:				
Lymphocytes	11.9 %	10.4 %	9.5 %	6.7 %
Large mononuclears ...	13.5	8.7	7.4	5.9
Transitionals	9.9	8.9	7.9	8.3
Polymorphonuclears ...	61.3	68.8	73.5	77.5
Eosinophiles	3.0	2.8	1.4	1.3
Basophiles	0.4	0.4	0.3	0.3

It is clear that the number of leucocytes follows quite closely the degree of improvement, being lowest in the "much improved," gradually increasing in number in the "improved," and reaching the highest count in the "stationary" cases. The slight decline in the number of leucocytes in the "progressive" cases may be compared to the decrease of resistance occasionally seen in severe or overwhelming septic infections with a consequent failure of the organism to produce a leucocytic reaction.

The percentage of the various forms of leucocytes in the different classes are quite characteristic. The percentages of lymphocytes and large mononuclears are highest in the "much improved" cases, with a gradual decline in the other groups, being lowest in the "progressive" cases. The percentage of polymorphonuclears bears an inverse relation to the above, being lowest in the "much improved," and highest in the "progressive" cases.

If, therefore, one is seeing a case of phthisis for the first time, one may feel happier about it if the total leucocytes are few, and the small and large mononuclear cells are relatively many. If, on the other hand, one is watching a case in which the leucocytes have been unduly numerous, and the polymorphonuclear cells relatively high, one may be pleased if successive counts at intervals show a fall in the total number of leucocytes per cubic millimetre of blood, and a relative increase in the large and small mononuclear cells.

This seems to point to leucocytosis being at any rate one factor in defence. But of course not the whole process. As another defensive process I would with the greatest diffidence suggest that one about which we are still profoundly ignorant—namely, fever. I believe it to be in some way related to defence, and its failure to appear under circumstances where it might be expected is very often of the gravest significance. I need only perhaps mention its absence in general peritonitis, whether in connexion with appendix trouble or not, and point to the fatal cases of diphtheria with subnormal temperatures, and to the fact that in some of the most malignant and fatal cases of scarlet fever the temperature never rises much over 100°. One of these came under my notice some years ago. It was the case of a woman of about 30, in whom the highest temperature was 101°, and which ended fatally in three days. She was cook in my own house, and I saw the case right through. It made a deep impression upon me. I have no proof of this idea, but I have always acted upon it and I have not interfered with temperatures in disease unless they are accompanied by all the nervous phenomena that denote hyperpyrexia. I was often placed in such a position that I could not carry out the usual methods of employing cold, and I did not dare to give powerful antipyretics as I could not watch their effect. But I have had no reason to feel disappointed at my results.

This, however, is a digression for which I trust to be pardoned. I mention it in support of the idea that fever should be looked upon (with reservation) not as the result of poisoning, but rather as a valuable indication of the struggle the organism is making in its fight with disease; certainly not an evil, more probably a friend. But, though we know little of the way Nature resists disease, we know some things that weaken resistance. Locally the bad effect of previous injury is well known, and I have already indicated my belief in evil influence of catarrh affecting mucous surfaces. Among general influences is exposure to cold. Previous recent illness and bad hygienic conditions are responsible for much weakening of our resistance; also starvation or even bad food, alcoholism, and fatigue either of mind or body. Hence, those whose acute illness has been preceded by a period of anxiety are not altogether satisfactory patients as regards recovery. And further, there is a difficulty which probably some of us do not sufficiently realize—that is, the occurrence of mixed infections; it not only complicates the question of treatment, but is bound, I think, to affect injuriously the resisting power. In what way these various causes act we cannot say. In general terms it may be said that, assuming man in his normal condition of body and mind to be resistant to disease, anything that interferes with absolute health renders him in some degree non-resistant. There are, however, special problems in connexion with resistance into which it would take too long to go deeply, even were I qualified to do so. A few deserve mention.

For instance, in tubercle, why is the resistance of some tissues different at some ages from what it is at others, and why should the resistance of the same tissue vary in the sexes?

Again, there is the general question of the resisting power at various ages. Children seem to be less immune from, but more resistant to, any acute infectious conditions. The exanthemata are far more frequent in children, and yet, as a rule, they are apt to be more severe in adults. Pneumonia, again, is more common in young people; in them the mortality is very low, but rises steadily in proportion to age. On the other hand, typhus is not so common in children, yet it is said to be not so dangerous in them. Enteric, again, is not so frequent in young children as in young adults, and is more frequent in the latter than in older persons; yet the mortality is smaller in young children and rises progressively as age advances. And apart from these questions there are the difficulties of dosage and the virulence of the invading micro-organisms. That these are more virulent at some times than at others seems certain, but we not know under what circumstances they become so. Investigation on this point would be valuable, and might throw some light on the origin of epidemics.

Finally there is, perhaps, the biggest difficulty of all—that is, the resistance of the individual. No two human beings are alike either in health or disease, and individual peculiarities and idiosyncrasies are not lost when men are ill. Probably the resistance of any individual man varies greatly from time to time; it is influenced, as I have indicated above, by many circumstances. His surroundings, mode of life, previous history, must all be taken into account.

His hereditary tendencies become important. Heredity, in spite of many efforts to diminish if not to extinguish its importance, is still generally admitted to influence disease in man, and I incline to think that it operates rather in a negative than a positive way. That is, assuming power of resistance, inheritances tend to produce points of non-resistance; or, to put it in another way, inheritance is rather the weakening in a particular direction of an inherent good quality than the intensifying of an evil one. Perhaps it may be said it is the same thing; to me, however, it is a more comfortable and hopeful doctrine.

The mention of the individual brings me back to the question, How is the resistance natural to every man to be evoked?

I take it, if we accept the doctrine of natural resistance, this is really the object of all our treatment of disease; we endeavour by our management of the case to bring out all the forces, whatever they be, that lie dormant in every one, and assist their operation either by directly strengthening them or by lessening any obstacles to their beneficent action.

But just here it is that we are still on uncertain ground, and until we know these things our treatment must be more or less empirical. Light is coming but slowly. The modern treatment of disease by antitoxins and vaccines is surely based upon the principle of helping Nature by the indirect action of living forces. Yet even here our path is beset with dangers, as evidenced by the difficulties of what is known as anaphylaxis.

And even if we knew Nature's general scheme of resistance to disease, even if we solved all the problems that I have mentioned as well as the numerous others that I have omitted, there would still remain the difficulty of the individual; for, as I said before, every man is an individual, and even at the best more or less imperfect. Perfection, whether of mind or body, is hardly to be looked for. We have, therefore, to take our patients as we find them, with all their imperfections, their idiosyncrasies of temperament, their weaknesses, whether due to themselves or their inheritances, and do our best to help them to recover from disease by strengthening the powers for good that remain to them. Alas, how often no response is made to our efforts! From one cause or another the power of resistance has gone, and we can only look on as the case progresses to a fatal termination. The maxim, "Treat the patient and not his disease," has a solid truth behind it, and if we knew our patients better in their ordinary lives and in their earlier slight departures from health, we should be in a better position to treat them in disease. Unfortunately we do not very often get the opportunity, but when we do, what an incalculable advantage it is! and if people only realized this, much could be done. If the prevention of disease is one of our highest aims, an important part of it must consist in the preservation of the health of the individual by teaching him how to keep his defences in good order.

Lastly, I think we must all realize that medicine is still far from being an exact science and that our ignorance is greater than our knowledge. But, if we also realized that the body is endowed with large powers of resistance to disease and that the problem of treatment is how to evoke those powers and help their utilization to the best advantage, and if we realized that resistance varies in the individual, then we would recognize that there is a certain unity in medicine, that it is the treatment of disease and not of diseases; we would recognize that we are not the masters but the servants of Nature, and we would sit humbly at her feet patiently investigating the secrets of that most marvellous collection of forces, the living human body, trying to help her, not endeavouring to take the case out of her hands. And a recognition of the unity of medicine would promote a spirit of unity among ourselves, we should hear less of systems of treatment, we should be spared those unedifying controversies in regard to special methods, of which we have had several instances lately, and which I confess are to me painful, for we would recognize that the goal we are all seeking to attain can be reached by several routes, and that no one of us has a monopoly of wisdom.

And, though medicine is somewhat overshadowed by the triumphs of her more brilliant sister, surgery, may we not look forward to a time when, by a sound application of the knowledge revealed to us by a patient investigation of Nature's methods of dealing with disease, we shall regain for medicine a portion of the field which of late years she has been forced to relinquish?

REFERENCE.
Sir Watson Cheyne, Wightman Lecture, 1908.

A Post-graduate Lecture
ON
THE DIAGNOSIS OF SPINAL CORD AFFECTIONS.

BY DAVID FORSYTH, M.D., D.SC., F.R.C.P.,
CHARING CROSS AND EVELINA HOSPITALS.

IF an account of the ordinary types of some everyday diseases is not too jejune for a post-graduate audience, I will, without parading anything rare or anomalous or even exceptional, review the common affections of the spinal cord. From the clinical standpoint, these cases arrange themselves in three groups according to their onset: (1) Those in which the symptoms come on all at once; (2) those in which the symptoms are acute, taking several hours or even days to develop; (3) those in which the symptoms are insidious.

I. WHEN THE SYMPTOMS BEGIN ALL AT ONCE.

So few affections begin in this way that the diagnosis is rarely involved, and, as a matter of fact, we have practically only two lesions to think of—trauma and haemorrhage.

In *trauma*, leading to injury of the cord, often as a result of fracture-dislocation, the diagnosis is presented to us in the history either of direct violence to the spine (as in falling from a height or from stabs and bullet wounds) or of indirect violence (by a weight hitting the head or shoulders or by striking the head passing under an arch). In these cases, if the patient lives, a question that may arise is the distinction between organic injury and mere concussion of the spine; with the latter, however, the patient should rapidly improve until, after a few days, his recovery is assured.*

Haemorrhage (haematomyelia), apart from injury, is likely to occur only if the cord is already softened by myelitis or a new growth; and though, in either event, the bleeding produces its effects within a few minutes, some history of the older-standing trouble is sure to be forthcoming. Yet another possible cause of haemorrhage that must not be forgotten is one of the blood diseases, especially pernicious anaemia. Whatever the cause, however, the symptoms by which haematomyelia is to be recognized depend on the position and size of the effusion. As a rule, we find that, without warning, the patient quickly becomes paralysed and anaesthetic up to the level of the lesion. Further, by the inevitable destruction, locally, of the motor nerve cells, the corresponding muscles atrophy and show the reaction of degeneration. Of course, in some cases, the haemorrhage, instead of lying inside the cord, is meningeal (as, for example, when an aneurysm bursts into the spinal canal), and on these occasions the symptoms, as sudden as before, indicate at first irritation of the nerve roots (paroxysmal shooting pains along the sensory fibres, with twitching or spasm of the muscles), and, later, compression of the cord by the effused blood. At this stage, when all impulses, up and down, are interfered with, the patient's sensation of every kind below the lesion is numbed or lost, while his muscles are weakened or paralysed.

II. WHEN THE SYMPTOMS BEGIN ACUTELY.

In these cases we find, as a rule, that the patients, so far at any rate as their nervous system is concerned, felt quite well until a day or two before, but that since then their nervous symptoms have come on rapidly. In these circumstances the diagnosis lies between three conditions: (1) An acute infective process in the cord; (2) some thrombosis in the spinal vessels; (3) acute spinal

* "Railway spine"—really a neurasthenic condition, better called "railway brain," as Thorburn suggested—presents rather cerebral than spinal symptoms.

meningitis. Truly, two other conditions—Landry's paralysis, which spreads within a few days from legs to trunk, to arms, to neck and head, when the patient dies, and diver's paralysis (caisson disease), overtaking workers in high-pressure chambers—might claim admission in this group, but they are in the one instance so rare and in the other so readily diagnosed by the suggestive history as to require no further time spent on them.

1. *An Acute Infective Process.*

These infections, inflammatory or toxic, attack either the grey and white matter together or the grey matter alone; in the former case we have acute myelitis, in the latter acute poliomyelitis. Both of them, being infective, are likely to be ushered in by febrile symptoms—headache, malaise, a little temperature, and so on. The nervous symptoms themselves depend, of course, as to their details, on the position of the inflammation.

Myelitis most often picks out the dorsal cord—sometimes the cervical, sometimes the lumbar. Sometimes, even, it is scattered up and down the cord (and in the brain as well) like, as it were, an acute form of disseminated sclerosis. Whatever its level, however, it usually spreads across the cord as a transverse lesion. This means that with every tract, ascending and descending, being involved at that level, all the nervous conditions lower down—sensory, motor, and reflex—will be disturbed. The patient, therefore, rapidly loses the power in his legs, which, for the time being, become flaccid; his sensation of every kind is dulled or lost; his reflexes, after disappearing for a while, return, become exaggerated, and, with ankle-clonus and Babinski's sign, mark the gradual onset of muscular rigidity.* Often, too, the upper limit of the anaesthesia is fringed by hyperaesthesia. In harmony with these changes the bladder as well as the rectum passes out of control, and the urine is retained to overflowing.

These are the results of the commonest form of myelitis—a dorsal lesion. What are the differences if the cervical cord is attacked? In addition to the foregoing, there is paralysis of the arms and intercostals, with anaesthesia running up to the new level. In the highest cervical lesions of all, the neck muscles, as well as the arm, may be paralysed; and the same with the diaphragm. Moreover, whatever the position of the myelitis, the nerve cells at that level will be destroyed; so that, in a case with the cervical or lumbar enlargement affected, we shall get not only paralysis, but muscular atrophy in the arms or legs, as the case may be, with the reaction of degeneration and the permanent loss of the tendon reflexes in the limb.

With myelitis in its disseminated form the effects, for the most part, are the same, but are distributed irregularly and, perhaps, perplexingly, more especially as some cerebral symptoms, such as nystagmus or optic neuritis, may be produced.

Acute Poliomyelitis.—The other acute infective process needs very few words to fill in its diagnostic features. Common only in children, it directly attacks nothing of importance except the motor cells, and therefore its direct effects are seen nowhere except in muscular paralysis. In its clinical course, as its ephemeral fever subsides (a fever so mild as sometimes to be overlooked altogether), the child is found to be paralysed—one limb, two limbs, all four limbs. The corresponding reflexes are gone and—that is all; unless, indeed, it be that the child complains of some pain when its limbs are handled. Later, of course—perhaps at the end of the week—electrical changes will appear with probably enough muscular atrophy to be both seen and felt; but, on the other hand, by this time some at any rate of the original damage should be made good, and, instead of, say, four paralysed limbs, the child now dangles only one.

2. *Spinal Thrombosis.*

This the second condition responsible for acute symptoms, is the result, apart from pathological states of the blood itself, of arterial degeneration, which, narrowing the vessels, hinders the stream of blood until it clots. As soon as this happens, that part of the cord deprived of its nourishment rapidly degenerates—a sequence of events better known in connexion with the analogous condition of cerebral thrombosis leading up to cerebral softening. Moreover, in the cord as in the brain, the outstanding cause of this endarteritis is syphilis, so that, for all practical purposes, we can interpret spinal thrombosis as syphilitic thrombosis. Occasionally, however, in old people, senile arterio-sclerosis acts in the same way.

As we might suppose from the nature of the process, its sum effect on the nervous elements of the cord is not very dissimilar to that of acute myelitis. Indeed, so alike are they that syphilitic thrombosis is often referred to, even at the present day, as syphilitic myelitis. Still, the former term is in every way preferable, even though, by their symptoms alone, thrombosis and myelitis can hardly be separated. To do this we are generally thrown back on any circumstantial evidence of syphilis (including the Wassermann reaction) that we can find; and the search for this needs to be closely pressed because of the necessity, before venturing a prognosis or beginning the treatment, of disentangling the two conditions.

Just one word more before leaving this question of syphilis and the cord. In addition to exciting thrombosis, the spirochaetes are guilty of other offences against the cord. Thus, their effects sometimes fall heavily on the spinal meninges, with their sensitiveness to pathological organisms, and, as a matter of fact, syphilitic meningitis is, perhaps, even commoner than thrombosis, though, most often, cord and meninges are affected together. This is the condition known as "meningo-myelitis." Yet here again the main trouble is vascular arteritis and phlebitis—and the blood clots both in the spinal and meningeal vessels. Even before this, however, the pia arachnoid is inflamed by a gummatous infiltration, and is sometimes studded with little miliary gummata. Though these morbid changes take time, the symptoms they produce may begin acutely at any time from a few months to several years after the infection. Once set in train, the earliest of them are meningeal, resulting from spinal nerve-root irritation—that is to say, shooting and girdle pains, hyperaesthesia, and perhaps muscular spasm, followed later by paralysis and anaesthesia, but still pain. Finally, as the arterial disease makes itself felt in the cord itself, we get back to our clinical picture of spinal thrombosis.

Throughout the opening stages of this meningo-myelitis, the diagnosis of spinal root irritation may be easy enough; the difficulty is to identify the meningitis as syphilitic. In addition to the Wassermann reaction, some help can be found, as will be explained immediately, in the cytology of the cerebro-spinal fluid, though, even with this, we must again remember to look for corroborative evidence in other directions.

3. *Acute Spinal Meningitis.*

This, the last of our groups of acute spinal affections, must, in order to fit the limits of this lecture, first be whittled down to get rid of those varieties of meningitis which, clinically, appear rather as cerebral cases than spinal. Thus we can put on one side tuberculous meningitis, septic, pneumococcal, influenzal, post-basal, gonococcal meningitis. All of these, no doubt, are acute infections of the spinal meninges, and yet none of them can fairly be made to stand as a disease of the spinal cord. Nor, for that matter, can spotted fever, although we call it cerebro-spinal meningitis. Still, before letting this one go, a small item of information can be extracted from it—namely, the connexion between spinal meningitis and head retraction, as seen so often in babies. Sometimes the explanation is offered that, with the head retracted, the cerebro-spinal fluid finds more room at the base of the brain, thereby relieving, to this extent, the increased cerebro-spinal pressure. The valid explanation, however, is of another sort. The head is retracted by muscles at the back of the neck (especially the complexus, the splenius capitis, and the upper part of the trapezius), which are innervated by the upper cervical spinal nerves. If, therefore, these roots are irritated, no matter what the cause, these muscles will be thrown into spasm, and will draw the head back. Head retraction, therefore, signifies cervical root irritation; and the most striking cause of this is cerebro-spinal meningitis.

To return to our muttons, however. The only truly spinal forms of meningitis are, first, acute septic meningitis resulting, as a rule, from inflammation spreading to the

* These changes do not occur if the transverse lesion is complete—that is, destroys every fibre and cell at the level. Instead, we have flaccidity with permanently lost reflexes.

membranes from a neighbouring part, and, secondly, the syphilitic meningitis already described. Sometimes, with the first-named, the attempt is made to distinguish a pachymeningeal from a leptomeningeal form—a distinction, however, without any clinical value, even if it can be made *post-mortem*. Practically always, if the dura is inflamed, the pia arachnoid is inflamed as well; and, even if an exception occurred, we are quite without the clinical means of separating the two. Acute spinal meningitis, then, so far as we are concerned, is in one kind only. The cases are not very common, but usually the patient, perhaps after a rigor, soon develops the sensory and motor signs, already described, of root irritation, which, at first, may be localized to a few spinal segments. Later, however, if the infection spreads over the cord, the symptoms keep pace with it until, finally, the patient passes into a condition, distressing to witness, which at first sight might even be mistaken for tetanus. He is thrown into painful opisthotonos by the spasms of his back muscles, while at the same time his legs and arms go stiff and rigid. Worse still, his suffering is aggravated, partly by his acutely hyperaesthetic skin, but more by the harrowing, darting pains that shoot along his spinal nerves. Towards the end, however, he finds a merciful relief in the paralysis which follows the irritation, and the spasms give place to flaccidity, the pain to anaesthesia. In these cases, of course, before settling the diagnosis, one would expect to find the primary source of the infection; and this most often lies in a carious vertebra, though sometimes in bedsores, local abscesses, cellulitis, or rarely, infective endocarditis.

So far as the organism responsible for a spinal meningitis is concerned, the point can hardly be settled without a bacteriological examination after a lumbar puncture. Even, however, in answering the main question—Is it meningitis?—the cerebro-spinal fluid is a great help, because when the meninges are inflamed great numbers of cells find their way into it together with inflammatory plasma. If, therefore, the fluid is turbid from cells, or if it gives chemical tests showing an excess of albumen, we have two pretty sure signs of meningitis, whatever its cause. Further, if the cells are polynuclear, the meningitis is very acute (such as the septic form we have been considering), but, if they are mainly lymphocytes, it is a milder variety (syphilitic, for example).*

III. When the Symptoms Begin Insidiously.

In this, our last group, the patients, as a rule, cannot say exactly how long they have been ill. All they know is that their symptoms, too trivial at first to be seriously heeded, have gradually obtruded themselves until at last they are beginning to interfere with their daily affairs. Now, as this insidious onset is shared by more than half a dozen chronic spinal affections, we must keep at hand some scheme of investigation by the help of which we can, in any given case and without waste of time, put aside the majority of the chronic affections, leaving only the two or three between which the diagnosis lies.

To do this, let us first mentally divide the whole group into two—those with none but motor symptoms, and those with sensory symptoms (whether with or without motor symptoms). Among the former we can place:

Motor Symptoms Only.

Progressive muscular atrophy—that is, chronic poliomyelitis.
Amyotrophic lateral sclerosis.
Primary spastic paraplegia.
Friedreich's ataxy.
Ataxic paraplegia.

And among the others:

Sensory Symptoms—? Motor as Well.

Tabes.
Syringomyelia.
Disseminated sclerosis.
Compression of the cord.

On these lines we are electing to make the sensory symptoms our guide, and therefore it is to the sensory phenomena that we must at once turn our attention. If any are found, we can straightway throw over our first list and concentrate on the second. *Per contra*, in their absence, the first list is the one to follow up. Let us take each in turn, beginning with the purely motor affections.

* This lymphocytosis is, of course, also associated with the chronic changes of parasyphilis.

A. *Chronic Spinal Affections with Motor Symptoms Only.*

With these the first thing to look for is muscular atrophy; particularly in the little muscles of either hand, or, if not here, about the shoulders or in the legs. Suppose this found, then we are dealing with either progressive muscular atrophy or amyotrophic lateral sclerosis. The distinguishing points between these two can be briefly summarized.

Progressive Muscular Atrophy.—The muscles of the patient's hand and, perhaps, his deltoid and scapular muscles are wasted and show fibrillary contractions. As a result the corresponding reflexes are feeble or lost and the electrical excitability decreased or absent. In a more advanced case the same process may have spread to the patient's legs or, ultimately, to his bulb. Sometimes this sequence is changed, the legs going first, the arms later, but never the bulb (Charcot-Marie-Tooth type). Sometimes, when only the right hand is affected, we have the "occupational" atrophy of file-cutters, gun-barrel engravers and others who, in their employment, make special use of their thenar, hypothenar, and interosseous muscles.

Amyotrophic Lateral Sclerosis.—Here again the patient's hand muscles are the first to go, but although the same fibrillary twitching and electrical changes are found his wrist-jerk and triceps-jerk are exaggerated. In addition, his legs gradually become rigid and present the features of sclerosis of the lateral columns (spastic gait, exaggerated knee-jerks, ankle clonus, and the Babinski or dorsal plantar reflex). This affection, like the last, sometimes spreads in the late stages up to the bulb.

Suppose, however (the case still being one with only motor symptoms), that no atrophy is to be seen. We have then to decide between primary spastic paraplegia, Friedreich's ataxy, and ataxic paraplegia.

Primary Spastic Paraplegia (or, from the tract affected in the cord, Primary Lateral Sclerosis).—This is marked off from both the others by the absence of inco-ordination. The patient complains of nothing but his legs, and these show the signs, just mentioned, of lateral sclerosis.

Friedreich's Ataxy.—The patient, usually a child, and often with close relatives similarly affected, is unable to co-ordinate his legs (and, later, his arms and head) and his knee-jerks are absent. In addition, his speech is peculiarly hesitating. Further, he may have nystagmus.

Ataxic Paraplegia.—Here inco-ordination is present, but neither nystagmus nor any affection of the speech. Moreover the patient's knee-jerks are exaggerated, and he shows both ankle clonus and Babinski's sign.

B. *Sensory Symptoms Present, with or without Motor Symptoms.*

We now come to a group with lesions that are rather variable. For this reason, be it noted, the symptoms in each instance may not always conform to one type. Still, allowing for this, we ought to be able to identify every sensory case with one of the following four:

Tabes.—This is too well known to need much by way of description. Any patient without his knee-jerks, but with Argyll Robertson pupils and lightning pains, is beyond question tabetic. In addition to these "pre-ataxic" symptoms, he may show hypotonus of his muscles, permitting extraordinarily free movements of his limbs, very variable sensory changes (including anaesthesia, girdle pains, visceral crises, and optic atrophy), squint, diplopia, and Charcot's joints. Later, when his ataxy has come to the front, his sensory changes may become even more extensive.

Syringomyelia, fully developed, combines the symptoms of (1) progressive muscular atrophy in the arms with (2) spastic paraplegia in the legs, and it might therefore pass as amyotrophic lateral sclerosis, were it not for its remarkable sensory changes. By these the patients are made insensitive to pain and heat and cold.† Their touch and muscle sense, however, are keen enough. On the other hand, they are subject to trophic changes, particularly glossy skin, cracked nails, or Charcot's joints. The diagnosis, therefore, turns mainly on the sensory symptoms, and is the easier to make, since these are often the first in the field.

† An affection which, in mediaeval times, by enabling people to pick up live coals, and do other things of the sort, was liable to be diagnosed and treated as witchcraft or wizardry.

In *disseminated sclerosis*, where the symptoms are particularly variable on account of the sclerosed areas being so inconstant in their distribution, the patient's legs are weak and spastic with all the tendon-reflexes exaggerated, while his (or her) arms, also weak, may be paraesthetic. More striking than this, however, and more important in the diagnosis, are its three cardinal symptoms, tremor, nystagmus, and staccato speech. By these it may be known, although in the earlier stages, before these three have fully developed, a hysterical counterfeit may lead us astray.

Compression of the cord, the result usually of caries of the spine, an aneurysm or a secondary growth, produces twofold symptoms—those of spinal root irritation followed by root paralysis, and those of a transverse lesion of the cord itself. Apart from these, however, we may expect a third set due to whatever is causing the compression. If this last group is not to be found, we are then thrown back on the possibility of some primary new growth inside the spinal canal, or a patch of chronically thickened meninges; in either case, the site of the pressure is identified by the distribution of the symptoms. The distinction between the two, however, may be a matter of difficulty. Perhaps the most suggestive differences are that in chronic meningitis the course is slower and that the pain, even from the beginning, is bilateral and spreads over a wider area. Moreover, the meningitis may improve without surgical treatment.

REMOVAL OF EXTRAMEDULLARY TUMOUR OF CERVICAL CORD: RECOVERY.

(AREA OF SUPPLY OF EIGHTH CERVICAL AND FIRST DORSAL POSTERIOR ROOTS.)

BY

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IN connexion with the following case, it is permissible to recall the frequency with which extramedullary tumours of the spinal cord are benign in character, and that this holds good when the patient is in later life. Hence the great importance of diagnosis, for by leading to operation it enables a patient suffering from one of the most painful and disabling of diseases to be restored to ease and active life. It is as well, also, to bear in mind the great power of recuperation possessed by the spinal cord, so that it can recover its functions even after very severe and long-continued compression, when the pressure is removed.

L. D., aged 55, married, was sent to the Bristol General Hospital by Dr. Harvey Bird, of Bridgwater, on May 2nd, 1911. Family history good.

The patient had small-pox when a child, and fifteen years ago had exophthalmic goître for about five years. She then completely recovered, and shows no sign of this disease now, except, perhaps, that her pulse is habitually rather quick—84 to 90 per minute. The menopause occurred at 45 years.

History of Symptoms.

1. *Pain.*—Two years ago (1909), following influenza, attacks of "cutting" pain in left shoulder, lasting a few weeks and then disappearing, and worse in damp or cold weather, occurred. Dull aching pains in the left arm followed shortly after those in the shoulder. For a time in 1910 she was much better, though not free from pain at intervals. In November, 1910, she had a fresh attack of "influenza," with severe vomiting and diarrhoea; since then pains in upper part of left chest, left shoulder, and shooting down left arm to fingers, especially little and ring fingers, have been more or less constant, varying in severity, and often preventing sleep. February, 1911, girdle pain around waist.

2. *Paraesthesia.*—About May, 1910, numbness in left arm from elbow to wrist, around waist, and in her feet and legs. The numbness of legs "felt as if it were in patches"; that around the waist disappeared again; in the other parts it remained permanent. Later, numbness and "pins and needles" affected ulnar border of left hand and little and ring fingers.

3. *Muscular Wasting.*—First noticed in left hand and forearm after influenza in November, 1910, then improved; but in January, 1911, reappeared, and since then steadily increased, affecting all muscles of hand, and also anterior aspect of forearm. Slight wasting of right hand muscles during last month.

4. *Paralysis.*—Loss of power in left shoulder, twelve months, probably at first due to pain; she kept her shoulder at rest because movement increased pain. Gradually increasing paralysis of left arm and hand. For two months left hand and forearm almost completely paralysed and useless. Partial paralysis right hand, one month. Gradual loss of power in legs, two months; unable to walk or to stand without support, two weeks; unable to sit up in bed, one week. Muscular cramps in legs not marked.

5. *Sphincters.*—Difficulty in micturition, four months; worse, three weeks; chief difficulty is in starting micturition. Obstinate and increasing constipation for about same time. General health good; all symptoms have progressed rapidly since shock of husband's sudden death three months ago.

State on Admission.

Well nourished, rather anaemic, with a distressed expression. She could not walk, nor could she stand without being held up. She could just sit up in bed with support. There was no paralysis of any cranial nerve. The pupils were equal, of normal size, and acted well to light, accommodation, and to painful stimulation of skin of neck. The neck muscles were unaffected.

Upper Extremities.—Right: Grip of hand very weak, moderate degree of wasting of small muscles of hand; arm and forearm unaffected. The hand muscles reacted to faradism, but required a strong current. No affection of sensation. *Left:* Small muscles of hand uniformly and extremely wasted, including muscles of thenar and hypothenar eminences, dorsal interossei and lumbricales. The muscles did not react to a strong faradic current. The little and ring fingers were slightly over-extended at proximal and flexed at distal joints. The little and ring fingers were most flexed. The hand was completely paralysed and useless. The long flexors of forearm were paralysed and did not react to faradism; the extensors were not paralysed and reacted. The elbow could not be fully extended. She could not raise her arm above the shoulder; movements of the shoulder were generally limited, and the shoulder muscles contracted, especially the pectorals, but not much wasted, from disuse owing to pain, and there were adhesions about the shoulder joint. Partial loss of sensation over inner (post-axial) side of limb. (See Fig. 1.) The elbow and wrist jerks were present on both sides. No loss of sense of position of either hand or arm, and objects placed in hands recognized at once.

Spine.—Some kyphosis in dorsi-lumbar region and slight lateral curvature.

Abdomen.—Apparently defective sensation to pin-prick over abdomen. Abdominal reflexes absent.

Lower Extremities.—The legs could be drawn up but not lifted off the bed. There was marked spasticity, the muscles being in a state of active spasm, but not wasted. Knee-jerks much exaggerated; slight ankle clonus on right side, not on left. Plantar reflex, extensor and Oppenheim's and paradoxical reflexes present on both sides.

Sphincters.—Complete retention of urine, which was acid, and contained no albumen or sugar. Obstinate constipation. Thoracic and abdominal organs normal.

Wassermann's reaction negative. Tuberculin test negative.

Cerebro-spinal fluid appeared under slightly diminished pressure and contained a considerably increased number of lymphocytes, but was otherwise normal.

It was considered advisable to give her a course of potassium iodide with liq. hydrarg. perchlor. This she had.

Condition on June 14th (Five Weeks after Admission).

She had a great deal of pain during this time in the left shoulder, passing down into the arm, and painful spasmodic contractions of left shoulder muscles and those of lower part of neck. Pain was increased both by passive and active movements. Pains had also begun to affect the right shoulder and arm. They were never so intense as to cause her to cry out, but often prevented sleep.

Wasting of small muscles of the hand was complete on left side and had rapidly advanced on right. There was also wasting of muscles on anterior surface of left forearm, and to a less degree of the right. The left upper extremity was completely paralysed. She could not hold a pen or spoon in the right hand, but could move the arm and forearm. The hands were therefore useless, and she had to be fed. Except that she could draw up the legs a few inches in bed, they were also paralysed. She could not sit up or turn in bed. Except for movements of the head and neck, of the right shoulder and arm, and, to a less degree, of the right forearm and of those muscles supplied by the cranial nerves, she was therefore completely paralysed. The pupils were unaffected. There was complete retention of urine and incontinence of faeces. Some defect of sensation to pain and temperature had now appeared over trunk and legs, and there was some loss of sense of position of the left arm and of the legs. The condition of the reflexes was the same as above stated.

After this period of observation the diagnosis was arrived at of tumour of the cord, external to it, on the left side, and at the level of, and compressing, the eighth cervical and first dorsal roots. I therefore asked my colleague, Mr. Hey Groves, to see the case, and he operated on June 21st.

Operation.

Solution of adrenalin, 1 in 50,000, was injected into the skin and muscles. The laminae of the sixth and seventh cervical vertebrae were first removed, then those of the eighth cervical and first dorsal. The laminae were removed on the left side

Fig 1 shows the sensory loss before operation. Over dotted area prick felt as touch over hand as high as *a*: above this very imperfectly felt as prick at certain points only. Slighter loss to light touch (cotton-wool) and to lesser degrees of heat and cold, but not to pressure, over whole dotted area.

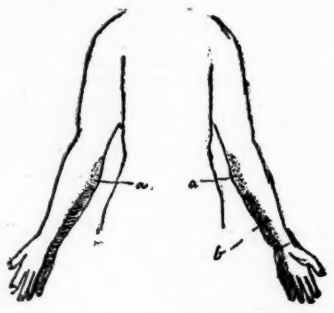

Fig. 2.—Sensory loss six weeks after complete division of left eighth cervical and first dorsal posterior roots. Over dotted areas a partial loss only. Over shaded area loss of sensation to light touch, pin-prick, heat, and cold. Boundary of each coterminous, except on anterior surface, where prick or touch on dotted area *b* provoked a "disagreeable" sensation. Sensation to pressure unaffected.

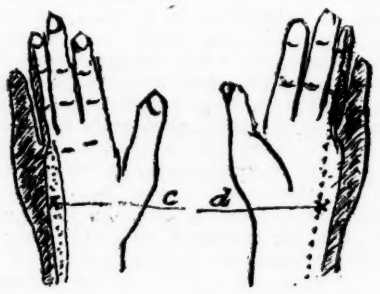

Fig. 3.—Sensory loss on hands. Shaded areas show same complete loss of sensation as on forearms. Over dotted area *c* touch or prick provokes a very "disagreeable" sensation. Over area *d* inside dotted line only slight loss of sensation, but no "disagreeable" sensation.

In each of these diagrams the figure on the left represents the posterior, that on the right the anterior, surface of the left arm and hand.

only. The dura mater was then opened, and it was noticed that the pulsation in the lower part of the exposed cord was deficient, and that there was very little cerebro-spinal fluid. The left half of the fifth cervical lamina was then removed, and a tumour was seen lying under the pia, opposite to the ligamentum denticulatum, at the level of the eighth cervical and first dorsal roots, attached by a short pedicle to the postero-lateral aspect of the cord. The left eighth cervical and first dorsal posterior roots lay over the tumour, and had to be divided to remove it. The tumour was a laminated fibroma, round or oval in shape, and measured 1½ in. by ¾ in. The cord was much compressed and narrowed, and was jammed up and flattened against the right side of the spinal canal.

After-History.

The patient recovered from the operation without a bad symptom.

By July 20th—one month after operation—she was able to sit up and to move her legs freely in bed and had a fair grip in the right hand, so that she could feed herself. She had nearly recovered power over the bladder and completely so over the rectum.

Electrical Reactions—Left Forearm and Hand.

Constant Current:

Supinator longus	KCC 2 ma.	ACC 3 ma.
Long extensors...	KCC 3 ,,	ACC 2 ,,
Ext. indicis	KCC 3 ,,	ACC 2 ,,
Small muscles of thumb ...	KCC 2 ,,	ACC 2 ,,
Dorsal interossei	KCC 3 ,,	ACC 4 ,,
Long flexors	KCC 8 ,,	ACC 7 ,,

Faradism (Left Hand and Forearm).—No reaction in long flexors of fingers; a doubtful, very feeble reaction to a very strong current in small muscles of little finger, thumb, and interossei; all other muscles of left arm and forearm react.

All muscles of right forearm and hand react to faradism, but require a strong current, and to galvanism.

The abdominal reflexes on the right side had returned; the left were still absent. The plantar reflex was extensor on the right, and mixed—that is, extensor response in great toe and flexor in the other toes on the left foot.

By August 2nd (nearly six weeks after operation) she could raise herself unsupported in bed, and had regained complete control over her bladder. The superficial reflexes as above. The knee-jerks were hardly exaggerated, there was no ankle clonus, and the spasm in the legs was rapidly diminishing.

On September 10th there was usually a flexor response in both plantar reflexes, but occasionally an extensor movement of the great toe appeared—a month later this could not be obtained. The left abdominal reflexes were obtained about this time, namely, about eleven weeks after operation.

Without going into details, it may be added that she is well on the road to complete recovery; she has recovered good use of the right hand and arm, and of her left arm; partial, and steadily increasing, use of the left hand, but the degenerated and wasted muscles of this hand must take several months to recover; she can walk well, unaided and with a natural gait, at the present time at least half a mile; she is rapidly extending her range of movements, and can go up and down stairs. At the date of writing this she is steadily and progressively gaining power over all the limbs, with an eventual prospect of complete recovery.

A few more details about sensation as regards the area supplied by the eighth cervical and first dorsal roots, which were completely divided at the operation, may be of interest. Unfortunately she was not a very good subject for investigation of sensation, and was not sufficiently well to be examined for some time after the operation. The slight disturbances of sensation present in the latter stages of the case over the abdomen and legs, chiefly defective sensation to pin-prick, had disappeared a fortnight after the operation.

The condition of the left forearm and hand is as follows:

Forearm (see Fig. 2).—Over an area on the ulnar side of the forearm, extending about 1½ in. on the anterior and posterior surfaces, upwards to about 2 in. above the elbow and downwards to the wrist, light stroking with cotton-wool and pin-prick are not felt. With regard to the latter, no difference is felt between gentle pressure with the head or the point of the pin, but a pin-prick is sometimes felt as such. The edge of this anaesthetic area to prick varies as much as ½ in., according as it is determined by approaching from the anaesthetic or sound skin. Heat and cold are not distinguished over the same area. The limits of loss to light touch (cotton-wool and pin-pricks) are, so far as can be made out, coterminous back and front. Two blunt points of aesthesiometer were not distinguished as two transversely to the long axis of the limbs in this area, in the long axis they were noticed as two at distances of 4 in. anteriorly and 7 in. posteriorly.

Hand (see Fig. 3).—A line drawn from the fissure between the little and ring fingers on the palm to the wrist parallel with the ulnar border of the hand, marks off an area on the ulnar side of the palm over which light touch, pin-prick, heat and cold are not distinguished, and two points not felt as such in either transverse or longitudinal axis at 2 in. The same affection of sensation is found on the little finger and ulnar half of the ring finger. Unlike the forearm, on the border of this area on the palm there is a zone about ½ in. wide on which any touch or light stroking is very unpleasant, giving rise to an ill-defined but painful sensation; two points can be distinguished at ⅝ in., and extremes of hot and cold felt. A pin-prick is felt rather as painful than as an actual prick. The outer margin of this area is ill defined.

On the dorsum, the little and ulnar half of the ring finger show the same anaesthesia. On the hand, a narrow area of anaesthesia on the ulnar border is bounded by a line drawn from the fissure between these two fingers to the wrist, parallel to the ulnar edge of the hand. Outside this there is a narrow zone where a prick is felt as touch, a light touch is felt, extremes of heat and cold are doubtfully distinguished, but there is not the same disagreeable sensation as in the palm. As in the forearm, the edge of the area of altered sensation varied according as it was approached from the anaesthetic (passed further out) or from the sound side. Pressure was felt everywhere over the anaesthetic area, and there is little or no loss of the

sense of position of the little finger. There are no distinct trophic changes over the anaesthetic area, except that the skin is a little shiny over the fingers.

REMARKS.

The differential diagnosis in this case, although in the light of the conditions found at the operation it may seem to have been fairly straightforward, was not definitely settled until the patient had been some little time under observation. That there was a lesion at the level of the lower part of the cervical region of the cord with affection of the pyramidal tracts below this level was of course obvious. The further points to determine were (1) whether the disease was extramedullary or within the cord, and (2) what was its nature.

Undoubtedly the first clue to the extramedullary seat of the lesion was the discovery of the partial loss of sensation on the post-axial side of the left upper extremity, showing that the left eighth cervical and first dorsal posterior roots were definitely involved. This was supported by the distribution of the muscles affected with wasting and altered electrical reactions, which coincided with the motor supply of the corresponding anterior roots. The pain was more widely diffused, but in its chief intensity corresponded fairly to the same roots. Further confirmation of an extramedullary lesion at this level was afforded by the order of onset of the cord symptoms, that is (1) pain, (2) paraesthesiae, (3) paralysis, (4) wasting of muscles, first at the level of the lesion, and then, as pressure began to be exerted on the cord itself, the appearance of spasm, increased reflexes, and paralysis in the legs, with finally, much later in the case, some sensory loss over the trunk and legs, and affection of sphincters, as the cord gradually became more severely compressed. On the other hand, there were perhaps three features of the case which were difficult of explanation on the above hypothesis of an extramedullary lesion involving at first these roots and then pressing upon the cord.

These were the paralysis of the left shoulder muscles, the atrophic paralysis of the small muscles of the right hand, and at first sight the absence of such severe pain as would be expected from such a lesion. This last point I will refer to again later. As time went on further acquaintance with the patient made it quite clear that she had intense pain at times, which she bore bravely. Further investigation enabled the paralysis of the left shoulder and upper arm muscles to be eliminated as a direct result of the lesion, for it presented the characters of that found in long-continued disuse of the shoulder and elbow joints, and the consequent formation of adhesions about them, and it was, therefore, regarded as due to the attempt to minimize the pains by keeping the joints immobilized, and accordingly only as an indirect consequence of the lesion.

The atrophic paralysis of the small muscles of the right hand without sensory affection was never satisfactorily accounted for until the operation. It might have been taken as an evidence of an intramedullary pressure effect, for example, myelitis, or a small extravasation of blood. That no lesion of this sort occurred, however, is proved by the rapid recovery after removal of the tumour. It only appeared late in the illness, and the explanation afforded by the conditions seen at the operation was that the nerve roots on the right side at this level must have been compressed against the bone, possibly against the edges of the bony foramina. The large size of the tumour, which seemed almost too great to be accommodated in the spinal canal, would account for this, though, even if this explanation be correct, it is difficult to see how the corresponding posterior roots escaped.

The other evidences of an extramedullary tumour on the left side were, however, to my mind, so strong that I felt justified in neglecting this feature of the case, leaving it unexplained before the operation.

As to the nature of the lesion, all the above symptoms, especially the localized nature of the focal symptoms, pointed to a tumour pressing on the left eighth cervical and first dorsal roots, but she had also kyphosis and lateral curvature of the spinal column, and therefore the possibility of tuberculous disease of the bones had to be considered. This was eliminated, however, by the absence of a local deformity of the spinal column, or of local tenderness of the spines, by the characters of the cerebro-spinal fluid, by the test for fixation of the complement for tuberculosis being negative, and by the absence of any tuberculous lesion elsewhere in the body. A syphilitic lesion was excluded also by the examination of the cerebro-spinal fluid, and a negative Wassermann reaction. There is just one other point of interest. There appears to have been no period in the case in which Brown-Séquard's syndrome was present. This syndrome is of frequent occurrence at some stage of cases in which there is either a unilateral lesion of the cord itself, or unilateral pressure upon it. In this case the affection of sensation below the lesion over the legs and abdomen appeared quite late, affected both sides equally, and was slight in degree.

The case further illustrates the fact that if it is not destroyed, or there is no pressure-myelitis, the cord is capable of recovering from an enormous amount of pressure when this is removed.

The order of return of reflexes is of interest:

Two weeks after operation: Sensory disturbance of legs and abdomen disappeared.
Four weeks after operation: Right abdominal reflexes returned; ankle clonus disappeared; left plantar reflex became "mixed" in character.
Six weeks after operation: Power over bladder recovered; knee-jerks still exaggerated.
Eleven weeks after operation: Double flexor plantar reflex; abdominal reflexes returned on both sides.

Another point of interest is the complete recovery from exophthalmic goitre some years previously, and that the patient was able to go through a severe operation without any return of it. Further, there was risk of being deceived by her statements as regards pain; she minimized this, but when one got to know her one learnt that she had very severe pain, but bore it bravely. Pain is a most important symptom in the diagnosis of cases of this kind, and yet its value in diagnosis is diminished by the difficulty of estimating it exactly, because patients vary so greatly in their power of endurance.

I cannot conclude without a grateful acknowledgement of what a large share in the successful result of the case was due to the very skilful manner in which the operation was performed by Mr. Hey Groves. There was no haemorrhage and no shock, and the patient recovered without any bad effects due to the operative procedures—a noteworthy fact in a woman of 55 years of age, and one to encourage explorations in doubtful cases of a similar kind. Lastly, the limitation by Mr. Groves of the operation to removal of the laminae on the left side only, whilst at the same time it afforded easy access to the seat of disease, no doubt resulted in greater subsequent stability to the spinal column, and earlier recovery of power in the back.

AN INVESTIGATION ON THE REGENERATION OF NERVES, WITH REGARD TO THE SURGICAL TREATMENT OF CERTAIN PARALYSES.

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PART V.

THIS article deals with secondary nerve suture, and the facts are derived from clinical and experimental studies.

The term "secondary," as opposed to primary nerve suture, is applied to cases in which the two ends of a divided nerve are not immediately united; or, at any rate, an interval of more than a few days is allowed to elapse before suture.

The condition present is a variable one. Much depends on the time interval before secondary union is performed. It is stated that two (Bowlby[1]) and three (Sherren[2]) years seems to be the time after which we cannot expect any useful recovery in the paralysed muscles, even if secondary union of the nerves be performed.

A great deal depends on the condition of the wound with regard to sepsis or otherwise. A suppurating lesion complicating a nerve division seriously alters the prognosis for the worse. This is well exemplified by two extreme cases.

I had had very little function return after union of the median when only six months had elapsed since the original division. This particular accident was caused by

the arm being pushed through a glass window, and prolonged suppuration followed. On the contrary, I have seen a very satisfactory recovery after secondary suture performed two years after the nerve division. The case was an obstetrical paralysis where the upper and middle brachial cords were torn completely across the ends and were found apart at the time of operation.

As a matter of fact, I believe total disconnexion of the central and peripheral ends of a nerve is rarely found after some months have elapsed, unless suppuration occurred originally. Nearly always a tapering filament stretches across the interval between the two ends of the nerve, and electrical stimulation shows it to contain many functionating fibres. This was the condition actually present in the case of obstetrical paralysis just referred to. In dogs I have occasionally seen a nerve grow across an interval of 1½ in. with almost perfect function after this interval of the nerve trunk had been experimentally excised.

Considering the various pathological conditions present, I believe any explicit statement as to time or amount of recovery is impossible after secondary nerve suture. But several general facts are undoubted:

1. Recovery after secondary nerve suture is slower than after primary union.
2. Recovery follows the same lines as in primary suture, but usually falls short of complete restoration of function—sensation and motion.
3. Other things being equal, the longer the time which elapses before secondary suture is performed, the more imperfect the recovery.
4. Finally, after an uncertain time, restoration of muscle function is unlikely, though a certain amount of sensory recovery is still possible.

The following experiments were made with the object of finding whether the motor nerve cells in the spinal cord, or the muscle and motor nerve endings, were mainly concerned in this failure in regeneration.

DOG I.

In both fore limbs the median was divided and 1 in. of the nerve excised. One year and nineteen days later secondary suture was performed. (In this, as in all other cases, the bulb on the central nerve was excised before suture.) On the right side the central end of the healthy ulnar was joined to the distal degenerated median. On the left limb the central end of the previously cut median was joined to the distal end of the healthy ulnar. Excision of a considerable length of nerve prevented union between the central and distal ends of the same nerve, though at the time of secondary suture it was found that a feeble connexion had taken place between the two ends of the separated median on either side. This was not sufficient to alter any result.

After 238 days it was found that the regeneration was much more perfect on the right than the left side. The test used was the sensitiveness in response to small faradic stimuli applied directly to the isolated nerve above the junction.

Conclusion.—In secondary suture (one year and nineteen days after the nerve division and after 238 days allowed for regeneration) the result is better when the distal nerve is the one degenerated for some time, and the central nerve a healthy one, than when the opposite conditions obtain.

DOG II.

Primary Operation (April 2nd, 1908).—Right side 1 in. of ulnar excised and on left side 1 in. of median.

Secondary Operation (October 8th, 1908—188 days).—Right side: Central healthy median was sutured to distal degenerated ulnar. Left side: The central end of the previously divided median was sutured to the distal end of the healthy ulnar.

Stimulation performed November 23rd, 1909—that is, one year and forty-six days after the secondary suture. Good regeneration had occurred in both legs. The sensitiveness was greater on the right side when tested with the faradic current applied directly to the nerves. This confirms conclusion in Dog I.

DOG III.

Primary Operation (April 21st, 1909).—Right side: Fore limb median nerve divided, and both ends fixed in rubber tubing to prevent wound fibres growing in the distal trunk. Left side same.

Secondary Operation (December 6th, 1909—229 days later).—Right side: Central end of previously divided median was sutured to distal end of freshly cut ulnar. Suture area was wrapped round with Cargile membrane. Left side: Central end of freshly cut ulnar was sutured to distal end of previously divided and degenerated median, Cargile membrane being again used to isolate the suture area.

Stimulation performed October 4th, 1910 (302 days later). On both sides the nerves about the suture level were fairly adherent for some distance to the surrounding structures, and were very difficult to separate from the vein and artery. Regeneration was very efficient, and was better on the left side where the central nerve was the healthy one.

DOG IV.

Primary Operation (May 6th, 1909).—Right: Fore limb median nerve divided and both ends fixed in rubber tubing. Left side same.

Secondary Operation (December 3rd, 1909—311 days later).—Same as Dog 3, but no Cargile membrane used.

Stimulation (September 23rd, 1910—294 days later) gave same results as Dog 3.

SUMMARY OF RESULTS.

In four series of experiments secondary nerve suture was performed at an interval varying from 188 to 384 days after the primary division. Two experiments were made on each animal. On one fore limb the central end of the nerve sutured was a healthy one (that is, just divided before the stitching), and the distal end the nerve which had degenerated for the varying periods of time. On the opposite side the central nerve was the nerve divided some considerable time previously, and the distal one joined to it was the freshly cut trunk.

The object of performing these reversed experiments on the same animal was accurately to contrast the two conditions. Thus the time element and the individual factor were identical in the two groups.

At the time of secondary suture it was found that several changes had taken place. Unless special means were taken to prevent it, the distal degenerated nerve was appreciably innervated by wound fibres; so much so that faradic stimulation to the nerve invariably gave a definite though feeble appropriate response.

In one case, even where rubber tubing was used, some wound fibres found their way to the distal trunk. In every instance of ununited nerve division wound fibre innervation plays a prominent part unless sepsis has occurred. In this case the resulting scar tissue interferes with these wound fibres.

In my opinion this explains the influence of sepsis in the original wound in preventing recovery after secondary nerve suture.

The distal degenerated nerve in the experiment was flabby, red in colour, and more or less adherent to surrounding tissues. In two cases a very feeble but still functional strand of nerve tissue had grown across the interval of 1 in. between central and distal ends of the nerve. This shows the vigorous power of nerve regeneration with aseptic conditions. The period allowed for regeneration after the secondary suture varied from 238 to 411 days. Many different conditions were found, which presumably occur in man where secondary suture is performed.* These include variation in size of the bulb where suturing was performed, adhesion to other tissues, etc. It is interesting to note that the cases in which Cargile membrane was used differed, if anything, for the worse in this respect. It is important to observe that whatever variety of condition was present one feature was constant. When the central end of an old divided nerve was sutured to the distal end of a recently divided nerve, the resulting regeneration was not so good as when the reverse condition obtained.

In other words, from the point of view of regeneration, an unremedied nerve division produces more serious changes in the central end (with the nerve cell) than in the distal end (with the muscle fibre and motor end organ).

The appearance in the nerve trunk is the reverse of this. Beyond the bulb at the divided face of the nerve there is little visible change in the central stump. The distal divided trunk is always thinner than normal, more or less adherent to tissues, flabby to the touch, and reddish in colour. The microscope shows marked alterations (Wallerian degeneration) in the distal nerve and none in the central.

From these facts it is legitimate to conclude that the motor nerve cell is more damaged by ununited division of the nerve trunk than the isolated neuro-muscular apparatus.

In other words, when secondary suture is delayed too long and regeneration is not effected, it is not due to degeneration of the muscle or to loss of chemiotactic attraction in the peripheral stump for the sprouting nerve fibres from the central nerve.

* Several animals in which suppuration occurred at the primary or secondary operation were discarded.

CONCLUSIONS.

1. The condition found after the non-union of a cut nerve trunk is very variable.

2. These varying conditions render any definite statement as to time limit to secondary suture difficult, if not impossible. I have had successful cases of secondary nerve suture in the human subject after many (six) years of non-union.

3. Where regeneration after secondary nerve suture has not taken place, the main cause (apart from local conditions at the suture area, such as sepsis) is lack of regenerating power in the nerve cell.

4. When all factors have been taken into consideration and it is concluded that restoration of function after secondary nerve suture is unlikely, there is still another surgical procedure open. This is the suture of recently divided central nerve fibres to the distal trunk of the degenerated nerve—that is, by nerve anastomosis to an adjacent healthy nerve.

My best thanks are due to Professor Osborne for many suggestions, and to Mr. Jona, who assisted me at most of the experiments.

The expense of this research was partly defrayed by a grant from the Royal Society.

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PNEUMOCOCCAL MENINGITIS.

BY

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THE causes of acute inflammation, with purulent lymph exudation, of the pia arachnoid are various forms of pus-producing micro-organisms, and not infrequently more than one kind of organism is found in the same case. The *Meningococcus intracellularis* of Weichselbaum usually suggests itself in the first instance, especially when cases of cerebro-spinal meningitis are known to be in the neighbourhood, though the claims of the pneumococcus for recognition as a common cause are well known to pathologists. The impression that this organism is a more common cause of acute meningitis than is generally supposed, and that involvement of the cerebral membranes is a more frequent complication of fatal cases of pneumonia than is commonly believed, must be my excuse for publishing the following cases. For the notes of the third case I am indebted to Dr. J. W. Smith of Ryton, who has kindly given me permission to use them:

CASE I.

James S., aged 15, a factory storekeeper, was in good health until February 1st, 1911, on which day he was struck on the head by a heavy iron bolt which fell 12 ft. He was not rendered unconscious, but it produced giddiness and headache. He was able to attend to his work next day, and little was thought of the injury until three days later, when he fell in a fit whilst at work. He was unconscious for upwards of two hours, and on recovering complained of pain in the right side of the chest and severe headache.

He was admitted into the Royal Victoria Infirmary on February 5th, when it was noticed that he was drowsy, had a temperature of 101°, a pulse of 95, and that his face twitched. Next day he was restless and delirious and complained constantly of severe headache, chiefly frontal. There was photophobia and slight nystagmoid movements and the pupils were dilated, but there was no ocular paresis. There was slight rigidity of the muscles of the neck, but no retraction of the head. The skin of the trunk and legs was hyperaesthetic. The knee-jerk was normal and the plantar reflex flexor. There was no optic neuritis.

On the third day of the illness the breathing became accelerated and a hyper-resonant note was detected over the left lung. This was, however, soon replaced by dullness, and harsh breathing by tubular, so that it was evident by the fourth day at least that the illness was pneumonia complicated by nervous symptoms. Lumbar puncture on the third day led to the withdrawal of clear fluid free of organisms at increased pressure.

There was little change in the symptoms until the sixth day, when the respirations and temperature rose, the former to 62, and the latter to nearly 104°. Indeed, for a day or two the signs of meningitis became less evident, and the case assumed in a more pronounced form the aspect of a very bad case of croupous pneumonia. On the seventh day the nervous symptoms resembled the delirium of enteric at the end of the third week; the patient was wakeful, muttered constantly to himself, and occasionally uttered loud shouts. He rapidly sank and died on the eighth day.

The urine was free from albumen throughout the illness, and there was no vomiting.

Post-mortem Examination.

Body poorly nourished. Rigor mortis general. No signs of injury to scalp or skull. The heart showed nothing abnormal worthy of note.

The pleural cavities contained small quantities of turbid fluid. Evidence of recent pleurisy over surface of left lung, both lobes of which were consolidated. The right lung was intensely congested, and the lower lobe contained patches of bronchopneumonia.

The spleen was soft and acutely congested. The liver and kidneys were in an advanced state of cloudy swelling.

Examination of the brain showed general leptomeningitis, best marked over the vertex, where there was a deposit of greenish fibrinous lymph. The exudate was also well marked over the base, especially on the under surface of the frontal and temporal lobes and over the pons, medulla, and cerebellum. Films from the cerebro-spinal fluid showed typical pneumococci.

CASE II.

James B., aged 38, cartman, was admitted into the Royal Victoria Infirmary in a semi-conscious condition on January 27th, 1911.

The history of the case was very indefinite. The friend who brought him to hospital stated that he had been found in a lodging-house that morning in a state of delirium, and had only been ill a few hours, having fallen in a fit, which was apparently the commencement of the illness.

The cheeks were flushed and the pulse and respirations quick. There were temporary intervals of consciousness, when his speech was slurred and slow and he appeared to have some difficulty in articulating. The temperature was 103.4°, the pulse 114, and the respirations 28. There was no paralysis. The tongue was furred and dry. The patient was restless and delirious and was with difficulty kept in bed. There was nothing definite to be detected in the chest. The reflexes were normal.

On the morning following his admission he became very violent and excited, and this was followed by a period of collapse, in which the pulse became weak and rapid (130), and a few hours later paresis of the right side of the face and right arm and left eye were noticed. The temperature was 103°, and the respirations 44.

As the day advanced he picked at the bedclothes and became more and more drowsy. The urine had to be drawn off, and was found to contain albumen and sugar. Then ptosis of the left eyelid appeared and the paralysis extended to the right leg with anaesthesia, on which the plantar reflex was extensor. The next development was paralysis of the left side of the face, motor and sensory.

A lumbar puncture was made, and turbid fluid flowed under marked pressure. It contained flakes of lymph, was highly albuminous, and did not reduce Fehling's solution. Pneumococci, streptococci, and lymphocytes were in abundance. A blood count showed no leucocytosis. The optic discs were normal.

He passed rapidly into a state of profound coma, and died on the morning of the fourth day.

Post-mortem Examination.

The body was well nourished. Rigor mortis present. *Post-mortem* lividity marked.

Brain.—Extensive suppurative leptomeningitis. The exudate extended to the vertex and over the base (temporal lobes, pons, and cerebellum). It was best marked over the right hemisphere. It passed down the spinal canal and affected chiefly the cervical and dorsal regions (back and front). A considerable quantity of turbid fluid escaped from the base of the brain and spinal canal. Stained films showed numbers of pneumococci.

Lungs.—Acute inflammatory changes in bronchi and extensive patches of bronchopneumonia on both sides.

Heart.—Muscle soft and flabby. Recent vegetations on both segments of the mitral valve indicating infective endocarditis.

There was cloudy swelling of the liver and kidneys and the spleen was acutely congested.

CASE III.

J. T., a man aged 42, was taken suddenly ill on January 23rd, 1911, with intense headache, vomiting, aching in the back and limbs, and general febrile symptoms (temperature 103°, pulse 132). On the third day delirium, and on the fourth twitchings of the legs and arms, with rigidity of the muscles of the back of the neck and coma were observed. Next day there was general rigidity with opisthotonos; the knee reflex was active and the plantar response extensor, and the pupils were widely dilated. He died on the sixth day of the illness.

Post-mortem Examination.

The lungs were congested and oedematous at the bases, but there was no pronounced consolidation. The heart was normal.

The soft membranes of the brain were covered by a greenish purulent exudate, which passed down the spinal canal. A bacteriological examination of the exudate demonstrated pneumococci.

There is abundant evidence in medical literature of the connexion between pneumonia and meningitis, dating from the publication by Immermann and Heller in 1868 of 9 cases of purulent meningitis found in a series of thirty pneumonic sections, and yet it cannot be said that the subject has received the attention it merits.

It would appear that our present knowledge does not justify any positive statement with regard to the frequency with which meningitis complicates pneumonia, as the statistics of writers vary within wide limits. Netter, for example, quoted by a writer in the *Lyon Médical* (1909), reports numerous statistics varying from 43 per cent. to 1 per cent. Beddard[1] suggests 1 per cent. above the age of 10 years, and from 1 per cent. to 2 per cent. below that age. Holt[2] met with meningitis four times in 500 cases. Osler[3] gives 8 per cent. of fatal cases.

But it is manifest that these findings cannot be relied upon, and I suspect that when the question has been gone into more carefully in the light of more extended statistics and improved methods of diagnosis, and latent cases are recognized, it will be found that meningitis, especially in children, is more common than is generally supposed.

An important paper by Liebermeister[4] on the frequency of meningitis with pneumonia makes the fact clear that the meningitis may easily be overlooked. In three out of eleven consecutive fatal cases of pneumonia occurring in adults ranging from 45 to 71 years, he found reliable microscopic evidence in the brains and spinal cords of acute meningitis, without any gross naked-eye appearances suggestive of membrane involvement; in none of these did the clinical symptoms and signs justify the diagnosis of meningitis. This author alludes further to the connexion between pneumococcal meningitis and outbreaks of cerebro-spinal meningitis, an association to which Immermann and Heller had already called attention, and which has not escaped the notice of other writers. Additional evidence of the frequency of meningitis in cases of acute pneumonia is to be found in the record by Hugo Meyer (to which Liebermeister refers) of 5 cases of latent purulent meningitis in 11 pneumonic necropsies.

The importance of Liebermeister's observation that the meningeal lesion was often microscopic is corroborated by the records contained in a paper on meningitis and meningo-encephalitis by Ludwig Kircheim,[5] who refers to 500 cases of pneumonia, all in young people; in 13 there was, in his opinion, clinical proof of meningitis, but ending in recovery; and in 4 only were there signs of purulent meningitis. In the case of the thirteen he was apparently content with the diagnosis of meningeal irritation (*meningealer Reizung*).

The opinion obtains very widely that cases of pneumonic meningitis are nearly always fatal, and probably very few would venture upon a favourable prognosis. Against this opinion may be set Kircheim's contention that the milder cases recover; and without any desire to minimize the risk or to call in question the correctness of the common belief that the prognosis is grave, I may quote the following case recorded by Dr. Hemenway[6] as affording some ground for the more favourable view.

A child aged 2 was admitted to the "Babies'" Hospital, New York, with complete consolidation of the left lower lobe, but without cerebral symptoms. On the twelfth day of the illness twitchings were noticed with some retraction of the head. Lumbar puncture was performed and 1½ oz. of clear fluid at high pressure were withdrawn. There was no deposit, but cultures of the fluid showed an abundant growth of pneumococci. The signs of meningitis continued, but on the fifteenth day of the illness the temperature suddenly fell, and the infant rapidly improved and left the hospital cured after an illness lasting twenty-four days.

I venture to think it would not be difficult to procure further evidence in this direction, for the contention that meningitis is not really a rare phase of pneumonia would seem to warrant the deduction that the milder cases recover, but this naturally raises the question how far we are justified in including cases without naked-eye pathological changes in the category.

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TRANSIENT HEMIPLEGIA FOLLOWING PARTURITION.

By HUGH GILLIES, M.R.C.P.Edin.,

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The following cases of hemiplegia following confinement occurred with such a short interval between them that they could not fail to arouse attention, and a desire for an explanation of the very interesting phenomena they presented.

Case I.

Mrs. M. H., aged 22, was confined of her second child on June 6th. She had "flitted" on the preceding day from a farm distant thirty miles from her new home; the journey had been done perched upon a quantity of household furniture on an open cart. About 8 p.m. on June 5th she felt her first pain, and I was sent for at 4 a.m. I found the head on the perineum, and the child was born in a few minutes; the placenta was expelled ten minutes afterwards. The whole confinement was perfectly natural; the child was a poor thing, at about the seventh month. The course of after-events was normal. I paid my last visit to the mother on June 14th, and allowed her up the next day.

On July 2nd, nearly a month after the birth, while sitting at the fireside nursing the child, the mother "was seized with a fit, her face was working, and she was all twisted to one side, her eyes were rolling in her head." I found her in bed; the face was pale and covered with a cold perspiration, the breathing was stertorous; the head, face, and eyes were drawn to the right side (conjugate deviation); the left arm and leg were flaccid, and when lifted dropped on to the sheet heavily. The pupils were dilated, and the conjunctival reflex was not quite abolished, though lazy. The sounds in the heart areas were normal, and there was no sign of any valvular trouble. The pulse was 78, the vessel wall soft, and the wave full and regular.

Next day she was completely conscious, and four days after the power had to a great extent returned in the affected parts, the hand being the last part to recover. A month after, the recovery was perfect in every part, with the exception of the thumb, which is to-day weak and shrunken.

On inquiring into the history after her recovery, the only thing of any importance was a story of chorea when she was 9, otherwise there was no neurotic history. There was no albumen in the urine either then or at the confinement.

Case II.

J. W., aged 25; her second child was born on August 1st; the confinement perfectly normal, and the puerperium uneventful.

On September 27th, while sitting by the fire with her baby, she fell off the stool, dropping the baby beside her on the floor; in this position she was found by a neighbour, who procured assistance and had her lifted into bed. She never lost consciousness, but remembered all that happened quite well. Paralysis affected the left arm and leg, the face and eyes being quite normal. She complained of most intense headache, which seemed to be of maximum intensity over the right side and above the right ear. The heart impulse was in the fifth interspace and powerful; a murmur was heard, of greatest intensity in the aortic area and systolic in rhythm; the pulse was 90.

The paralysis of the limbs lasted for three days, and then quickly recovered. She is now quite well. In this case also there was a history of chorea during girlhood, but nothing else of any importance.

Here we have two very interesting cases of something producing a sudden and powerful temporary effect upon the brain, and almost as quickly being withdrawn, with complete restoration of function to the parts involved; and it may be permitted to indicate briefly the probable causation of the attacks. In Case I, though the patient made a complete picture of a cerebral haemorrhage, yet there was an indefinable something which made me hesitate to give a too grave prognosis—it may have been the symptoms of haemorrhage into the brain with a tranquil pulse; it is not easy to say. After the first case the second was much easier to define.

That it was neither an apoplexy nor an embolism is proved by the almost complete restoration of function in either case, and, though local palsies and unconsciousness are not uncommon in uraemia, yet the known good health of the patients, the absence of albumen, and of all other signs of kidney trouble, make it necessary to exclude it also.

It seems to me that both cases were caused by a spasmodic contraction of the cerebral arteries—an angiospasm—such as is known to occur in migraine (in which case the retinal arteries on ophthalmoscopic examination can be seen as thin threads). The occurrence of previous attacks of chorea in both cases adds to the soundness of the

theory, indicating, as they do, an instability of the nervous system. It is curious that the extent of the paralysis in both cases is almost identical—the same side affected, at the same occupation, and the same history of previous chorea. Unfortunately there is no record of the mental state of either patient just before the attack, as it would have added much interest to the cases; but as neither can throw any light upon their thoughts at this time any speculation would be useless.

That the thumb in Case I has remained partially paralysed may be accounted for by supposing that the special artery to the thumb centre (such a centre is recognized) has remained in a state of spasm for a longer period and produced a weakness of the ganglia by insufficient nourishment. In Case II the theory of spasm is very greatly supported by the intense headaches, the great complaint of the patient being, "Give me something for my head." I have been unable to find any record of similar cases, and so can quote no authorities upon the causation of this strange affection.

TWO CASES OF TETANUS TREATED BY SUBDURAL INJECTIONS OF MAGNESIUM SULPHATE.

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As this form of treatment may be said to be in the trial stage, the following notes may be of interest.

CASE I.

On September 28th, 1911, Ronald R., aged 9 years, complained of feeling ill, and did not go to school. The following morning, as his condition was unchanged, the parents called in Dr. Morris, of Mount Morgan. Just after the doctor arrived the patient had a violent tetanic seizure, and was ordered to the hospital. He was admitted at 1 p.m., the temperature then being 99.4° and the pulse 112.

The boy had been in the habit of running about barefoot, and there were several small cuts and abrasions on both feet. The cuts were carefully cleaned, and then swabbed with tincture of iodine, and a gauze dressing applied. Although the patient lived some miles out in the bush he had no further convulsions during his journey to hospital.

As soon as the wound had been dressed the boy was put to bed and 1,500 units of antitetanic serum (P. D. and Co.'s) given subcutaneously. At 3 p.m. the patient had a tetanic seizure which lasted two or three minutes; risus sardonicus was well marked, and from this time on there was great difficulty in opening the mouth.

Similar attacks occurred at 4 p.m. and at 5.15 p.m., and a second dose of 1,500 units of serum was then given. The temperature had risen to 100.2°. The attacks now recurred with increasing frequency, until they were almost continuous.

At 2.30 a.m. I injected a third dose of 1,500 units of serum, and under chloroform anaesthesia punctured the spinal canal between the third and fourth lumbar vertebrae and withdrew 2.5 c.cm. of cerebro-spinal fluid, and slowly injected in its place a like amount of sterile 25 per cent. solution of magnesium sulphate. A small pustule had developed in the sole of one foot, and I excised the surrounding tissue and swabbed with pure carbolic acid. In this tissue I subsequently identified the tetanus bacillus. I learnt afterwards that the boy had wounded his foot with a rusty nail some days before, and this was probably the site of the wound.

After the injection of the magnesium sulphate the patient slept quietly for an hour, and then quite suddenly the breathing became embarrassed, and the temperature fell to 97°. As the breathing became steadily worse, a small hypodermic of strychnine was given, and repeated in half an hour's time. The boy's condition distinctly improved, and he took liquid nourishment well.

At 10 a.m. on September 30th the temperature rose rapidly to 104.6°; cold sponging was resorted to, and the temperature fell to 100°. The boy slept all the afternoon, and seemed on the high road to recovery, until the early hours of October 1st, when the temperature again rose to 104°. Cold sponging now had no effect on the temperature, and the breathing again became very embarrassed. Strychnine was administered and oxygen given, but the boy's condition gradually became worse, and he died at 10.40 a.m, the temperature immediately before death being 107°.

From the moment the magnesium sulphate was injected to the time of the boy's death no trace of tetanic spasm occurred.

The dose recommended is 1 c.cm. of a 25 per cent. solution for every 25 lb. body weight, but from the effect of the drug in this case I am inclined to think this dosage too large.

CASE II.

On November 9th, 1911, Vera H., aged 8 years, whilst running about barefoot, cut her foot on a stone. The wound was treated at home until November 22nd, when the child, who appeared to be out of sorts, was brought to the hospital.

On admission temperature and pulse were normal. The foot was soaked for twenty minutes in 1 in 4,000 solution of mercury perchloride, and then dressed with a boric acid fomentation.

The patient was put to bed and slept well all night, but at 7 a.m. on November 23rd she had slight muscular twitchings and complained of pain in the back and of difficulty in opening the mouth; 1,500 units of antitetanic serum were given subcutaneously, and the wound on the foot swabbed with tincture of iodine. Five grains of potassium bromide were given every three hours.

The muscular twitchings continued at intervals all day, and the temperature rose steadily until at 5 p.m. it had reached 104°. Under chloroform anaesthesia I injected 1,500 units of antitetanic serum into the subdural space, having previously withdrawn an equal quantity of cerebro-spinal fluid.

The tetanic symptoms persisting, I gave a hypodermic injection of $\frac{1}{12}$ grain of morphine. As the bladder was becoming distended, the catheter was passed, 20 oz. of urine being withdrawn. The patient passed a restless night, and the following morning (6.30 a.m.), under chloroform anaesthesia, I injected 1 c.cm. of a 25 per cent. sterile solution of magnesium sulphate into the subdural space.

This procedure was followed by a distinct improvement, and the muscular spasms ceased until noon, when they recurred with increased violence and frequency. A second hypodermic injection of morphine was given with great benefit, the child becoming quieter, getting a fair amount of sleep, and taking nourishment well.

At 10 p.m. the convulsions returned, the attacks coming on about every hour till 4 a.m., when they ceased, and the child slept till 7 a.m. Severe attacks of tonic and clonic convulsions then came on, recurring every few minutes throughout the day. More morphine was given, but had no effect.

At 4 p.m. a frightful attack of convulsions took place, the body being violently jerked about the bed, and death ensued ten minutes later.

The patient suffered from retention of urine the whole time she was in hospital, and the catheter was passed as required. During the forty-eight hours preceding death the temperature was high, and cold sponging was resorted to frequently, and seemed to have a very soothing effect. Immediately before death the temperature rose to 108.2°.

From the above notes it will be seen that magnesium sulphate used in this way is a particularly potent drug, and to find the correct dosage seems to me to be the great difficulty. The two patients were about the same age and weight, and I feel sure that the dose administered in the first case was too big, whilst I fear I erred on the other side in the second case.

We see a good deal of tetanus in this part of Queensland, and from my own experience I am inclined to think the above treatment is the one most likely to bring a case to a successful issue.

A SUPPOSED CASE OF HEAT-STROKE: REMARKABLE RECOVERY.

By ALEXANDER STOREY ST. JOHN,
M.R.C.S.ENG., L.R.C.P.LOND.,
ELTHAM, KENT.

THE following case seems to me a most notable one, and, as far as my experience goes, is quite unique. It presents many difficulties with regard to the exact pathological condition that was involved, also as to the diagnosis.

A man, aged 53, was crossing a road during one of the hottest days of last summer, when he suddenly found himself on the ground, with a "horse's hoof right on top of him"; this was his description of what happened. He picked himself up and ran across the road to his son, who was waiting for him on the pavement, and who brushed the dust off his clothes. He complained of no pain or discomfort of any kind, but his son took him into a chemist's shop, where he was given a dose of sal-volatile. He then went home by train (a distance of eight miles), sat down and made a good tea, feeling quite well all the time. Towards the end of this meal he became a "little queer," went upstairs and felt very ill indeed, and remembered nothing afterwards. This attack came on about five hours after he had fallen down in the road. I was sent for and attended about half an hour later.

I found his condition extremely grave; he had vomited profusely, was very pale, slightly conscious, with cold and clammy sweat, a slow regular pulse of fairly good volume, pupils reacting to light, and conjunctival reflex present. I was told that he had been much worse before I came, and had been quite unconscious.

I had him placed in bed, and after hearing his recent history, carefully examined him for signs of injuries, but beyond a

bruise on each elbow there were none. The head showed no sign whatever of any injury. The patient gradually recovered consciousness. Three days subsequently he seemed to be progressing favourably, and complained of nothing beyond slight giddiness and some headache, which he did not seem to localize particularly. He ate and slept well, his pulse and temperature were normal, the bowels open, and urine passed freely. I considered him to be going on very well, indeed practically out of danger, and informed his friends to that effect. On the fourth day, however, he became partially unconscious; he still took his food well; the bladder and rectum acted naturally, all the reflexes, superficial and deep, were normal, as were the optic discs, and there was no paralysis of either limbs or speech; the urine contained no sugar or albumen. I called Dr. F. S. Toogood of Lewisham in consultation, and we gave a hopeful prognosis. Coma, however, gradually increased, and he became actually unconscious; his breathing, which up to now had been quiet, was stertorous; he could still swallow a little.

As the patient's condition looked very serious, I asked Sir D. Ferrier to see him with me. At that time the patient passed both urine and faeces unconsciously, and he was unable to swallow. There were slight twitchings of the muscles of both upper extremities, and occasionally of the lips. The pulse remained steady and regular at about 70, and the temperature ranged between 99° and 100°.

The next day Mr. Ballance saw the patient with me; he advised withdrawal of cerebro-spinal fluid from the lumbar region, and drew off under pressure 1½ oz. of very slightly red-coloured fluid. The patient at this time was thoroughly unconscious, and his state seemed hopeless; his temperature had gone up to 104°.

During the five hours after the aspiration the patient gradually became conscious, and within twelve hours he was talking, taking nourishment, and quite able to understand everything that was said to him. The deep, superficial and conjunctival reflexes, which had been absent, all returned. During this period constipation, which was very marked, was most difficult to overcome.

For the next three days the patient appeared to be going on very well, but on the fourth day after the aspiration I noticed that he was gradually again lapsing into a state of insensibility, with symptoms of paralysis; he vomited twice, and there was less of power of deglutition. Mr. Ballance again visited the patient, and performed a second aspiration in the same neighbourhood, drawing off a similar amount of cerebro-spinal fluid of the same appearance as before. Again within five hours the patient began to show signs of returning consciousness, and at the end of twelve hours he was quite sensible, able to talk, and take food by the mouth. From that time he never retrograded, and has made an excellent recovery; he subsequently went to the seaside, and now—several months afterwards—appears to be in his ordinary health.

The principal aim of treatment was to keep the patient and room as cool as possible. The head was shaved and surrounded with ice-bags. The room had large blocks of ice standing in trays, and an electric fan was kept going continuously. The spray from a garden-hose was kept plying on an adjoining roof, and by so doing prevented the reflected heat-rays from radiating into the room. By these means we were enabled to keep the temperature of the room at 60°, whilst the temperature in the shade outside was about 90°.

I have known the patient intimately for the last twelve years, and beyond the fact that I removed some glands from his neck five years ago, he has always enjoyed excellent health, with no organic disease of any kind. A few weeks before the illness he passed as a first-class life for insurance purposes, but on that occasion he was not examined by me. He came to see me about three weeks prior to this attack, complaining of headache and giddiness, accompanied by slight epistaxis. These symptoms I attributed to the excessive heat, and on keeping him as quiet and cool as possible they passed off. To complicate the diagnosis there was the history of a hurt, and the question arose whether he became suddenly unconscious and fell down in the road, or whether he was knocked down by a cab. However this may be, there was no visible injury to the head, and as he immediately rose up and walked to the railway station there would not appear to be any serious result due to a fall or other possible accident.

My opinion is that he had a sudden heat-stroke and fell down as a consequence of that, the heat being excessive (between 80° and 90° in the shade), and he had passed the morning in the somewhat violent exercise of running up and down stairs and walking about large warehouses. He is a total abstainer and non-smoker, his arteries were in an exceedingly good condition for his age, with no symptoms whatever of atheroma, and there was no increase of blood pressure. I think the existence of intracranial tumour may be excluded in this case, there being no prolonged pressure symptoms beyond the coma. It was at one time thought to be a case of haemorrhage affecting the cerebral cortex; but, although there was slight twitching of the arms, this soon passed away, and there was no motor paralysis.

The remarkable recovery in a few hours from what appeared to be imminent death, on two occasions, after the withdrawal of the cerebro-spinal fluid, seems to rather point to the fact that he was suffering from what might in a sense be described as a "blistering of his cerebral cortex," caused by the excessive heat rays of the sun (a meningo-cortical oedema), and that the fluid was being excreted faster than it could drain away, and by removing the excess a drain was established, and thus the pressure was relieved.

ACUTE ANTERIOR POLIOENCEPHALOMYELITIS IN SOUTH STAFFORDSHIRE.

By L. S. TOMKYS, L.R.C.P., M.R.C.S.,
MEDICAL OFFICER OF HEALTH, RURAL DISTRICT OF LICHFIELD.

THE following cases of poliomyelitis which came under my observation during July and August will probably be of interest, in view of the prominence which has recently been given to this disease in its epidemic form. Six of the cases occurred in my own practice, and the seventh was under the care of Captain Bagshawe, R.A.M.C., to whom I am indebted for details and for permission to include it. Five of the cases occurred in the village of Whittington in five separate families, and two (in one family) in a semi-detached cottage about a mile away, the building being an isolated one.

CASE I.—Male, aged 1 year and 4 months, seemed feverish on evening of July 1st, but little notice was taken of this. The next morning it was apparent that the right leg was partially paralysed. This would seem to have been the first case.

CASE II.—Male, aged 6 years. The date of onset is doubtful, but it was some time between Cases I and III. The boy was feverish one night and two days later it was noticed that the right leg was partially paralysed. No doctor was called in, and when seen for the first time on August 16th, when investigating the cases, the child was quite well, with the exception of a slight limp.

CASE III.—Male, aged 1¾ years, had a typical attack of measles about July 8th. He was out four days after the rash appeared. His brother had measles a fortnight before. On July 15th he appeared to be unwell, but there was nothing definite. On July 18th he apparently had pain in the head, which was retracted. The temperature was subnormal, the pulse rapid, the pupils equal but rather large. He was constipated. He had lost the use of both arms, but could move the hands.

CASE IV.—Male, aged 2¼ years. On July 21st had headache and feverishness, and next morning it was noticed that the movements of the left leg were impaired.

CASE V.—Aged 1¼ year (under the care of Captain Bagshawe, R.A.M.C.). The child was first seen on July 21st, when it was brought to the Military Hospital with slight rise of temperature and tenderness of both legs. The following day there was complete paralysis of both legs from the hips down.

CASE VI.—Male, aged 1 year and 7 months, was sick on August 28th and quite helpless on August 29th. There was retraction of the head and loss of use in both arms from shoulder to elbow.

CASE VII.—Male, aged 2½ years (brother to VI), lost the use of both legs on August 29th, but had been tired and sleepy for about a week previously.

Both these children had suffered from summer diarrhoea.

Whittington, in which five of the cases occurred, is a small village about three miles from Lichfield, and, although the sanitary arrangements naturally leave much to be desired, they are certainly no worse, if anything rather better, than the average. Not being situated near a main road, rapid traffic is scarce, and the village was singularly free from dust, considering the dryness of the summer. The house in which Cases VI and VII occurred is situated in a field close to a by-road.

The water supply is obtained from the South Staffordshire Waterworks Company by the houses in the village, the remaining house being supplied by a well.

Cases II and III had the same milk supply, but the others each had a separate one. The Whittington cases were in the centre of the village, and within a circle with a radius of about 100 yards; the houses were fairly clean and not overcrowded. None are situated near a stable.

It is difficult to trace the origin of the outbreak, as the first child to suffer had never been away from home, and no visitors had been to the house. The child partook of ordinary food, and the only animal on the establishment was a cat. There may, of course, have been abortive cases before this, but I could obtain no information of such. The local veterinary surgeon (Mr. Connell) informs me that he

has not had any cases in animals which could have had any bearing on the causation.

The mother of Case IV took the child inside the house in which Case III was lying ill, but did not enter the bedroom. This was three days before her own child was attacked. Although Cases VI and VII reside a mile away, the grandfather lives in the village, and visits them once a week. I am assured, however, that he had not been in contact with the other cases. This is the only evidence of direct contact which I have been able to obtain, while, on the other hand, the five children attacked in the village were in separate houses, and no second cases occurred in these, although there were other children in each. As regards the two children who were attacked in the same house, the circumstances suggest a common source of infection rather than contact from one to the other. Neither were the children of their immediate neighbours affected, although isolation was not attempted, and communication was as free as usual. With the exception of the child who commenced with measles, I could get no history of nasal or pharyngeal catarrh, and only two had diarrhoea previously. It is noteworthy that, in spite of the character of the season, the village of Whittington was almost free from summer diarrhoea.

The only factor which appeared to be common to all was the plague of flies and wasps.

None of the cases proved fatal, and, although more or less paralysis remains, each case is still slowly improving.

A CASE OF POISONING BY OIL OF MIRBANE (NITRO-BENZOL).

By C. W. HOGARTH, L.R.C.P., M.R.C.S.,
ASSISTANT SCHOOL MEDICAL OFFICER, L.C.C.

OIL of mirbane, known also as essence of mirbane—sometimes spelt "myrbane"—is a clear, bright yellow fluid, with a penetrating aromatic odour of an almond-like character. Caspar,[1] who first described it, says it is used in soap perfumery, but it seems nowadays to be used in the manufacture of blacking, and its peculiar odour is perceived on opening a fresh tin of shoe-blacking. Its specific gravity is 1180 to 1200. It is the product of the action of strong nitric acid on benzene.

W. Blythe quotes Jubell,[2] "that up to 1876, from the time of the discovery of the compound and its commercial use, 42 cases of poisoning were recorded, 13 of which proved fatal, one being suicidal and the rest accidental."

Caspar[3] says the body, long after death, retains the strong odour of bitter almonds; whereas, in poisoning by prussic acid, the body soon loses the characteristic odour. The blood is dark and fluid, and it gives the spectrum of acid haematin.[4]

CASE.

Shortly after 11 p.m. I was asked by a woman to go at once and see her husband, who had taken poison. I could not gather its nature, so I took an emergency case with me. On entering the bedroom one perceived a peculiar odour of an almondy character.

The patient was lying on his back in bed; the eyelids were open, and there was a slow nystagmus to the right. I was immediately struck with the purple colour of the lips—just, as one writer has described it, as if the lips were stained with blackberry juice. The skin was dusky in hue, the conjunctivae insensitive, and the pupils dilated. The limbs were relaxed. The breathing was somewhat embarrassed, the pulse could only just be detected; on auscultation the heart beats could be heard faintly, and the rhythm was irregular. The patient vomited once whilst I was in the room; the vomit had the same odour as the room.

The following history was obtained: The man had had toothache the previous night, and on the advice of a fellow-workman had obtained some oil of mirbane at his works and applied it on cotton-wool to his teeth. Next morning he had felt drowsy, and had not felt fit to go to work. Later in the evening he got worse, and about 10 p.m. he became unconscious. Inasmuch as he had vomited and the poison had been absorbed it did not seem much use giving an emetic, so I ordered more blankets (the limbs were cold) and hot-water bottles to be applied, and gave the man 0.20 gram of caffeine hypodermically. At this time another medical man arrived (he was seen subsequently by still another). I saw him again at 1.30 a.m.; his condition had been improved slightly.

Next morning he was conscious, but his lips were blue, and there was still the persistent odour, exhaled from his body, filling the room. He made an uneventful recovery; the dusky complexion gave way to one of good colour and the pulse became bounding. Nothing more was done beyond the ordering of the exhibition of plenty of fluid. I regret I did not examine the blood.

The points that struck me most were that this was not an ordinary want of oxygen blueness, for the breathing was not embarrassed to any marked extent, but that some profound blood change had taken place, as to the nature of which there are many speculations. It is said that the blood loses its power of oxygen carrying and that the carbonic dioxide content is increased, but in view of the respiration this does not seem satisfactory. The sudden onset of the unconscious condition is to be noted; it came with the suddenness of cerebral haemorrhage, some hours after the nitro-benzol had been taken.

An artificial benz-aldehyde, not by any means so toxic, is now used in perfumery.

REFERENCES.
[1] Caspar's *Forensic Medicine*, vol. ii, p. 50 et seq. [2] *Die Vergiftungen mit Blausäure v. Nitro-benzol in forensischer Bezeichnung*, Erlangen, 1876; W. Blythe, *Poisons*, v, 4th edition. [3] Caspar's *Forensic Medicine*, vol. ii, p. 50 et seq. [4] Filehne, Ueber die Giftwirkungen des Nitrobenzols, *Arch. für exper. Pathol. u. Pharm.*, ix, p. 329.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

AN UNUSUAL URINARY DEPOSIT OF CALCIUM CARBONATE.

I WAS much interested in Dr. W. Herbert Brown's communication in the BRITISH MEDICAL JOURNAL, January 6th (p. 9), because, though I have never met with a similar deposit during the microscopical examination of urine obtained in the ordinary way, I have found that a similar deposit is not rare in the contents of cysts of the renal cortex, when those contents have become more or less turbid and inspissated.

Dr. Brown's patient was a man, aged 65, suffering apparently from chronic interstitial nephritis, and it is therefore extremely probable that his kidneys contained cortical cysts, the contents of some of which may have been more or less turbid owing to a process of gradual inspissation. The inspissated contents of one or more of such cysts may have found their way into the urinary

tubules, and may thus have been discharged with the urine, giving rise to the unusual urinary deposit discovered by Dr. Brown.

The crystalline bodies in renal cysts, similar to those in the urine described by Dr. Brown, were circular or oval, as seen under the microscope, varying in size from three times the size of a leucocyte to much larger. They showed lines radiating outwards from the centre, and seemed to be enveloped by a clearer outer membrane; sometimes there were three or four concentric circular markings in addition to the radiating striation. They took on the ordinary blue stain with methylene blue. In August, 1895, I noted that these bodies were possibly crystals of calcium carbonate, deposited in an albuminous medium, but I am afraid that I neglected to prove them to be so. On pressure with the cover-slip, they broke up, and doubtless were really spherical (not flat, circular) bodies, having a structure exactly similar to the balls of iron pyrites, which one may pick up any day on the beach of the "Warren" at Folkestone. I here figure drawings of some of the bodies (one of them showing the outer, membrane-like, layer partially detached) which I found in the turbid contents of renal cysts about 1895. I had previously noticed the presence of similar bodies on examining the contents of renal cysts when I was a student, or a member of the resident staff at St. Bartholomew's Hospital. I believe that bodies with a similar appearance have been described as leucine, deposited in globular masses, with concentrically thickened walls and fissured surfaces. Possibly some of the bodies,

supposed to have been leucine, and seen in artificially concentrated urines, were really not leucine at all, but globular crystal formations of calcium carbonate, deposited in an albuminous medium.

London, W. F. Parkes Weber.

A VACCINE TREATMENT OF HYDROCELE.

When investigating the contents of hydroceles for the presence of germs, I found the contents sterile as a rule (I examined 40 cases), but on one occasion met with an organism which on cultivation proved to be the *Bacillus pyocyaneus*. A vaccine (sterile) containing 25 million of *B. pyocyaneus* was then prepared and injected into the tunica vaginalis (after this had been tapped and evacuated) of the patient in whom the organism in question had been isolated. The injection produced a severe inflammation which lasted seven days, and during this time the scrotum refilled, and its circumference became 2 inches larger than before tapping, while the patient's temperature varied between 101° and 103° F. On cessation of the inflammation the circumference of the scrotum returned to 20 inches. Matters remained in this condition for nearly a month, and for this period it appeared as if the severe inflammation had produced no beneficial effects whatever. Then, however, the swelling gradually decreased, and in two months' time the circumference of the scrotum was reduced to 5 inches and the hydrocele completely cured. This was a year ago, and the man still remains free from his former complaint, although it had previously existed for ten years, and his hydrocele had been tapped more than a dozen times.

Encouraged by the success of this experiment, I then introduced vaccine containing 5 to 10 million of *B. pyocyaneus* or *Staphylococcus pyogenes aureus* into a dozen cases; in some cases the vaccine was introduced after tapping, and in others without tapping. Generally the results obtained were remarkable, the sequence of events in the hydrocele cases being usually identical with those recorded in connexion with the case here described.

I cannot do better than illustrate my remarks by putting a few cases in tabulated form. In 2 cases I had failures because the amount of vaccine was, I think, too small. I have tried this method in a case of ascites with good results, and think it might prove useful in cases of pleurisy.

Results of Hydrocele Cases Treated with Vaccine.

Case.	Date.	Age.	Duration of Disease.	Number of Times Tapped Before.	Circumference of Scrotum.	Tapped or not Tapped during Treatment.	Quantity of Fluid Removed.	Results.
			years		in.		oz.	
1	9.1.11	45	12	6	20	Yes	20	Circumference reduced to 5 inches. Cured 24.2.11.
2	2.3.11	35	3	3	30	Yes	41	Reduced to 6 inches, 25.4.11.
3	12.3.11	38	7	—	12	No	—	Reduced to 5 inches, 10.5.1.
4	15.3.11	22	2	2	13	No	—	Reduced to 5 inches, 7.5.11.
5	20.3.11	25	2	—	10	No	—	Reduced to 5 inches, 28.4.11.
6	4.4.11	30	6	12	43	Yes	56	Double hydrocele. Reduced to 6 inches, 2.6.11.

S. Mallannah, M.D.Ed.,
Bacteriologist to the Government of H.H. the Nizam of Hyderabad.

Dr. L. S. Norman and Dr. C. Franks have been appointed to the Commission of the Peace for Jarrow.

In a booklet descriptive of the new operating block opened a short time ago at the North Riding Infirmary, Middlesbrough, the secretary-superintendent of the institution, Mr. Charles Postgate, provides a very clear account of its various arrangements, illustrating them by some excellent photographs. The outstanding feature is the proximity of the operating theatre, sterilizing department, surgeon's room, anteroom, anaesthetic room, and *x*-ray room, and the completeness with which all these are separated from the rest of the building.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

Otological Section.

Friday, January 19th, 1912.

Dr. Milligan, President, in the Chair.

Treatment of Otogenic Brain Abscess.

The Section debated, together with the Neurological Section, the question of the factors which conduce to success in the treatment of otogenic brain abscess.

Sir Victor Horsley, who opened the discussion, dealt with the clinical features of brain abscess, and showed patients recently operated upon, as well as a number of slides by means of the epidiascope. He said it would be agreed that the chief factor conducing to success was early detection of the abscess and its correct localization. He showed two patients on whom he had recently operated. In each of those patients it was quite obvious that the process was continuous, from the primary infection of the ear to the development of the abscess. Often a case of otitis media, especially if it had been treated by mastoid operation, was regarded as well when it really was not well. The child shown had the mastoid operation performed in Wales, and appeared to be well; still it must have had symptoms at that time, which were obvious on arrival at the hospital in London. Chronic otitis cases should be regarded from two standpoints—the bacteriological and the neurological. Blood counts and opsonic tests should be made and clinical records taken at regular intervals; the discovery of an abscess, or an outburst of meningitis could thus be anticipated. With regard to the neurological aspect, many years ago Sir Russell Reynolds pointed out that in cases of otitis media chronica, the reflexes were not normal and the reflexes on the side opposite to the head lesion were altered. That point was not a new one, and he would like to hear the experience of others on the point. He urged more frequent bone operations, because in the adult these abscesses were due to prolonged infection of bone, and that meant that the surgeon had not been sufficiently industrious in scraping away the disease. The chief difficulty in the early detection of cerebral abscess in most cases was not being able to distinguish between abscess and meningitis; indeed, sometimes those conditions were combined. There were four or five cardinal symptoms to which he drew attention. He believed that by pulse alone one could distinguish between the two conditions. In meningitis the rate and force of the pulse would always exhibit an irregularity not met with in brain abscess, unless the latter were highly complicated. In contrast to the irregular and small pulse of the case of meningitis was the regular full pulse associated with abscess. He did not suggest that the abscess pulse was a mere compression pulse, but that it was due to a difference in the affection of the cardiac nervous apparatus. An abscess was a localized lesion not directly affecting the roots of the vagus. Temperature had a special significance. He did not know of a case of meningitis simulating abscess with a low temperature. The meaning of depression of temperature pointed out by Sir Samuel Wilks in brain abscess was not yet sufficiently recognized by the profession. In cerebral abscess the real difficulty was to know whether the abscess was single or multiple. The heat-regulating centres were probably in the pre-central gyrus, and if a lesion were in the coronal plane through the Rolandic area, there would be a rise of temperature on the opposite side of the body. But if the lesion were posterior to that plane there would be no rise of temperature, nor if it were anterior to that plane. If the lesion were in the cerebellum, there would not be a rise of temperature then on the opposite side, nor even on the homolateral side. With regard to motor loss, as the base of the brain rested on the rigid skull and the pus collected in the temporal lobe in cerebral abscess, there was a graded hemiplegia, the face being most involved, then the arm, then the trunk, and lastly the leg. Of the two Rolandic gyri, the posterior was more sensory in function than the anterior. If there were a pressure lesion of one hemisphere, the pressure told on the Rolandic area. If it were posterior to the coronal

plane through the Rolandic fissure, although motor paresis might be scarcely noticeable, there would still be detectable the delicate loss of localization of position and to touch, what he suggested should be called "topognosis." If a minuter examination were made of the cases neurologically, from both the motor and the topognostic sensory standpoints, changes would be discoverable which would lead to the suspicion of the development of abscess. With regard to the reflexes, there was absolute evidence at one's disposal in differential diagnosis, because in meningitis the superficial reflexes soon disappeared, and were affected bilaterally. In the case of brain abscess, however, they were unilaterally affected, and took a long time to disappear. Changes in the abdominal reflexes preceded and continued far longer than the changes in the knee-jerk; thus investigation of the abdominal reflexes was more important than that of the knee-jerk. With regard to the question of optic neuritis, that was a large subject in connexion with otitis media, and he spoke purely as to localization. Constant examination of the fundus oculi showed that in these cases vascular changes preceded neuritic changes; one could detect an over-filling of the retinal veins on the ipsolateral side. One would expect a difference between meningitis and abscess in this respect, because in the former there was a universal pressure on both halves of the brain, so that there would be a bilateral neuritic change. He suggested that this was the case. The meningitic cases showed a highly oedematous and swollen disc, in contrast to the moderately swollen disc of abscess. He asked for opinions regarding optic neuritis accompanying petrous bone disease in children. In a case he saw with Mr. Scott the neuritis was singularly local—that is to say, in the upper part of one disc only, and that on the side on which the ear was affected. On that point alone a decision could be taken in regard to active operative measures. Sir Victor Horsley went on to give details in connexion with the two patients he had brought, and exhibited charts of the fields for different colours. He had not dealt with the question of technique, because he did not think there was anything special to be said about that; it was a question of adequate drainage and vaccination. Drainage was often mechanically a difficult matter, and of recent years he had always employed concentric tubes, so that there was not a time when no tube was in the wound until it finally granulated.

Mr. C. E. WEST introduced the pathological aspect of the subject. He said it was rare to find more than a plastic meningitis surrounding the firmly adherent stalk of the infected part of the brain, and he did not think abscesses ever burst into the meninges at that point. But in the descending horn of the lateral ventricle there was a circumstance of great geographical importance in temporo-sphenoidal abscess. Even moderate-sized abscesses came into dangerously close relationship with the inner aspect of this cavity. While effusion of fluid in the ventricle might offer some support to the abscess wall, it rendered impossible adhesion and obliteration of the cavity. Therefore infection of the ventricles often occurred through organisms passing through some thickness of brain tissue, and a true burst might occur into the ventricle, with a fatal result. When that happened the whole ventricular system became rapidly infected. The slower entrance of organisms into the ventricle through a septum between the abscess and the descending horn allowed of some localization. There was a danger of inserting drainage tubes too deeply into an abscess cavity and so injuring a thin wall of separation from the cavity of the descending cornu. Profound coma could be recovered from after the relief of pressure in temporo-sphenoidal cases. The loss of even large portions of the temporo-sphenoidal lobe seemed to make little difference to the patient, either intellectually or motorially, at least in hospital patients. It was often difficult to say how far an abscess was truly within the cerebellum, and how far it was interlamellar. Here secondary infection of the meninges was far commoner than in temporo-sphenoidal abscess, and the infection often spread over the upper and lower surfaces of the cerebellum, leading to general basal infection. Direct pressure might close the apertures by which the communication between the fourth ventricle and the subarachnoid space was secured, or the openings might be sealed by a plastic meningitis in cases of mild infection of the meninges near the posterior surface of the petrous. In severe secondary meningitis the fourth ventricle might be infected through the lateral apertures of Key and Retzius, or the mesial foramen of Magendie. The question of geography affected the prospects of effective relief by operation, and the balance was in favour of the temporo-sphenoidal lobe, with its advantages of easier access, possibilities of wider exposure, and better drainage position. Brain abscesses varied widely in their limitation, which was proportional to the acuteness or chronicity of the condition. In most otitic abscesses limitation was incomplete and the surrounding brain was softened and infected. An extreme condition in either direction was unfavourable. A thick and firm abscess wall rendered sound and permanent healing difficult, as the cavity was not readily obliterated. Present-day knowledge of the bacteriology of brain abscess was not very satisfactory. Ordinary otitic abscess, with infection by continuity, was highly mixed, the pus being much the same as from the ear. The influenza bacillus was rarely recovered. The densely capsuled abscesses were generally pneumococcal. A few abscesses were due to *Staphylococcus aureus*, which might act as a gas producer in the brain. In temporo-sphenoidal abscess he always used the single route from below for drainage; he thought a counter-opening endangered the meninges and might lead to the infection of fresh brain substance. Moreover, he did not think increased efficiency of drainage was secured by the second opening. He objected to the use of the trephine in otitic abscess of the cerebellum. As little damage as possible should be done to brain tissue. He used an expanding trocar to explore the brain. Where the abscess was well defined, tubes formed a satisfactory drainage; he used a rubber tube of good size, or two of smaller size stitched together. He had abandoned lateral holes in tubes, as they soon became blocked. He believed most of the drainage secured by a tube took place along its surface. The drainage of areas of diffuse infection was one of great difficulty. He had no fondness for gauze for drainage. He was a great believer in prolonged drainage of all brain abscesses, shortening the tube very slowly. He believed the movement and replacement of tubes during the first ten days was responsible for many of the disappointments in cases which at first appeared to be doing well.

The PRESIDENT tendered the thanks of the Section to the two openers of the debate, and referred gratefully to Sir Victor Horsley's paper before the Pathological Society of Manchester in which he dealt exhaustively with the question of the ipsolaterality of optic neuritis. Since that date his knowledge of the commencing stages in the optic disc, as pointed out by Sir Victor Horsley, had been of enormous value to him, not only as to the site of the abscess, but when to step in and interfere. The initial changes were noticed on the nasal side of the disc. He regretted that there had not been time for Sir Victor Horsley to enter in some detail on the question of technique, as that gentleman was known to be a master of technique. Mr. West's paper teemed with information of a pathological nature, and the President asked those who would speak to pay special attention to the question of drainage, and whether and how chronic as well as acute brain abscess should be drained.

Dr. URBAN PRITCHARD related the particulars of one of the early cases of recovery from brain abscess—that of a man, now aged 49, who entered King's College Hospital under the care of Sir Watson Cheyne and himself in September, 1890. Following the operation the man had epileptic fits for some years, preceded by aphasia, which was the warning of the approach of a fit. But he was now practically well, and had not experienced a fit for the last five years. He showed the patient at the meeting, up to which time he had not seen him for fifteen years.

Dr. H. J. DAVIS showed two girls who had been operated upon by him for intracranial abscess. The first case had the radical mastoid done for acute otitis. She had extradural abscess. At the second operation, a few days afterwards, she was found to have multiple temporo-sphenoidal abscesses. After the second operation she had fits and facial paralysis, and became maniacal, with great degeneration of habits; but she slowly recovered, and a large surface of the cerebellum sloughed off. Later she had further fits, and Mr. Armour thought she had a frontal

lobe abscess. That region was explored, but nothing was found beyond acute cerebritis. The girl was now well. The second patient was transferred from a fever hospital, where she had acute diphtheria and acute otitis. She had mastoid abscess with extension backwards. One ounce of pus escaped, and he drained by means of tube and gauze. She still had albuminuria.

Mr. PHILIP TURNER showed a patient, 12 years of age, whose trouble began with a discharge from the right ear and had persisted a long time; the symptoms were quite typical. After the operation there was a considerable hernia cerebri, but no treatment was adopted for that. Eighteen months later the boy had a large polypus in the external auditory meatus. On removal of it there was a gush of cerebro-spinal fluid, which ceased in two or three weeks.

Mr. WAGGETT showed and described a case in a girl of 22 who had had a discharge from the right ear ever since an attack of scarlet fever at the age of 5. A right radical mastoid operation was done, and 2 ounces of foul pus were removed. A rubber drainage tube was stitched in and left in for five days, a probe being passed along the tube every day. The patient made a good recovery.

Dr. LOGAN TURNER (Edinburgh) exhibited a table of 68 operations during six years on subjects of brain abscess at Edinburgh Royal Infirmary. He felt there had been sometimes a failure sufficiently to recognize the symptoms, so that operation either was not done, or was done too late. There was another class of case in which the symptoms and signs seemed to suggest a condition which did not really exist. He had not worked out the ophthalmoscopic appearances in his cases specially, but, after Sir Victor Horsley's remarks, he would look into that question again. There were 22 cases of localized brain abscess, as opposed to 58 occurrences of sinus thrombosis and meningitis. That was in favour of a more successful treatment in localized brain abscess. There were 11 cerebellar, as opposed to 8 temporo-sphenoidal. In 8 cases of abscess, and 2 in which the extradural abscess was in the middle fossa, there was temporal headache in 6, frontal headache in 2, and in 1 it was not stated; whereas of the 11 cerebellar abscess cases, in 7 the headache was frontal, in 1 vertical, in 1 occipital, in 1 it was absent, in 1 not stated. Of 5 cases of left temporo-sphenoidal lesion, in 4 there was aphasia of the visual type, the inability of the patient to name objects. In 8 cases of left cerebellar abscess that sign was not present. In temporo-sphenoidal cases vertigo was present in 1, no vertigo in 8. There were 7 with no nystagmus and 2 with. Of the 2 cases with nystagmus, in 1 there was inner ear disease, in the other extradural abscess in the cerebellar fossa. In the cerebellar cases vertigo was present in 8; 2 patients were too ill to have it tested, and of 1 there was no note. Thus nystagmus and vertigo formed important localizing symptoms. The nystagmus was in both directions in 5 cases, greater in degree towards the affected side. In 2 it was to the affected side only, in 1 to the normal side. In cerebellar cases nystagmus was variable; sometimes it was present, sometimes not.

Mr. HERBERT TILLEY spoke as to the relative frequency of post-operative Jacksonian epilepsy. In one case the aura consisted of a sense of a foul smell. He animadverted against the use of gauze drains, and advocated the employment of a tube of very definite calibre.

Mr. HUGH JONES (Liverpool) commented upon the value of the points which Sir Victor Horsley had brought forward, and asked a number of questions, largely concerned with drainage.

Dr. WILLIAM HILL spoke upon the relative danger of the various kinds of abscesses and the range of usefulness of vaccines, reminding the meeting in this connexion of the variety of organisms which might be present.

Mr. HUNTER TOD related some cases which had come under his care, and pointed out the difficulties which he had encountered. It would be a great advantage if the profession could settle what patients with this condition actually died of. He asked what should be done in cases in which epilepsy developed after operation.

Dr. A. BRONNER (Bradford) also discussed the question of vaccines and a number of points in technique.

Mr. DOUGLAS DREW spoke as to the frequency of optic neuritis. He had rarely met with chronic abscess, except in the adult. In most cases acute abscess in the skull was very unfavourable.

Mr. SYDNEY SCOTT emphasized the high mortality of brain abscess generally, and gave an analysis of 644 cases of intracranial infections at St. Bartholomew's Hospital during sixteen successive years; 267 of those were definitely due to the ear, excluding cases of tuberculous meningitis in which there was otitis media at a late stage. In 100 of the 267 there was leptomeningitis. Of the remaining cases 55 were lateral sinus thrombosis, and 42 brain abscess, of which 30 were temporo-sphenoidal, and only 12 cerebellar. Of the remaining cases 34 were extradural, and there were a few miscellaneous cases which died from other causes. He divided the cases also into periods of seven years, and compared the operative results, which were in favour of the later advances—95 per cent. having been reduced to 70 per cent. mortality. He believed that this high mortality could be met by prophylactic measures, that is, earlier operations on the ear.

After a few remarks on the general subject by the PRESIDENT, Sir VICTOR HORSLEY and Mr. WEST replied.

OBSTETRICAL AND GYNAECOLOGICAL SECTION.

Thursday, January 4th, 1912.

Dr. AMAND ROUTH, President, in the Chair.

Specimens.

Dr. ROBERT WISE: Cervical tube to be left in the cervix after dilatation. Dr. DRUMMOND MAXWELL: Angio-chorioma of uterus. Dr. BLAIR BELL: (1) Exfoliation of endometrium during menstruation; (2) bilateral solid tumours of the ovary, probably carcinomatous sarcomata.

Missed Labour.

Dr. SWAYNE (Clifton) read a paper on two cases of missed labour. Spiegelberg defined missed labour as being the occurrence of the nisus of parturition at or about term, with the subsequent evacuation of a dead or decomposed fetus either by nature or by art. The first case described was one by Oldham in 1847. The period of retention varied greatly. Hagmann describes one case in which delivery by Caesarean section was necessary, the fetus being retained in the uterus for 440 days after the last menstruation, or about five months after term. The condition was rare, only 15 cases having been collected by Hagmann in 1904. In Dr. Swayne's first case, the patient, who had had three previous pregnancies, last menstruated October 16th, 1904. On June 10th, 1905, she had a flooding, and on the 24th the liquor amnii was discharged, and a mass expelled which the midwife attending recognized as placenta. She ligatured and cut the cord. This was followed by an offensive purulent discharge, and on August 8th a portion of the fetus began to come away *per vaginam*. The patient was admitted to the Bristol Royal Infirmary in a very grave condition, semi-comatose, and the uterus was found to be enlarged to the size of a six months pregnancy. The contents of the uterus, which were decomposing, were removed with great difficulty after dilating the cervix, but, in spite of all restoratives, the patient sank the same evening. In the second case the patient last menstruated on December 17th, 1906. On September 17th, 1907, the patient had slight pains and uterine contractions, but these soon passed off, and nothing more occurred till November 30th, 1907, when Dr. Swayne was sent for, and found labour had begun and the os dilating. Owing to the large size of the child, delivery had to be effected by craniotomy. The child was retained for 340 days after the last menstruation, and weighed 14 lb.

Rhabdo-myosarcoma of Uterus.

Dr. W. BLAIR BELL (Liverpool) read a paper on a case of rhabdo-myosarcoma of the uterus.

Miss L. C., aged 70, had the menopause twenty years ago, and remained quite well until July, 1911, when she noticed a slight reddish discharge from the vagina, which was not offensive then but became so later. On September 15th she passed a large piece of growth, which was found on histological examination to be a mixed-celled sarcoma. The uterus, tubes, and ovaries were removed a few days later, and the patient made a good recovery. Ten weeks later she was suffering from intestinal obstruction, and the abdomen was found to be full of growth. Enterostomy was performed, and the patient lived for about a week. The specimen removed showed the uterine cavity to contain a large polypoid growth round

which the wall of the uterus was stretched. On further examination, the tumour proved to be a mixed-celled sarcoma in which there were a large number of broad spindle cells, and some of them were striated muscle cells of a somewhat embryonic type. The recurrent growth in the abdomen was also found to be a mixed-celled sarcoma.

Size of Uterus in Hydatidiform Mole.

Dr. HENRY BRIGGS (Liverpool) read a paper on the relative size of the uterus in cases of hydatidiform mole, and exhibited illustrative cases and specimens. He said that amidst the ample available evidence that the clinical features of cases of hydatid moles had, in the main, been accurately stated by obstetrical writers, he proposed to discuss only one feature—the relative size of the uterus—in cases of hydatidiform mole, and to produce clinical reports of 23 cases and specimens collected by him chiefly from his own practice during the past eighteen years in support of the following conclusions: First, that the uterus in size was very rarely, and then only temporarily, proportionate to the period of pregnancy (only 1 case in the 23), and was almost invariably disproportionate, in 16 of the cases being undersized, and in 4 oversized. Chorion-epithelioma was present in 2 cases, in 1 undersized, in the other oversized. Secondly, the author contended that in almost all cases in which there was either abnormal uterine tension or a rapid increase in the size of the uterus, the retained blood or intrauterine haemorrhage ought to be considered. A complete clinical report of the 23 cases embodied in the paper was then given.

Dr. W. S. A. GRIFFITH drew attention to the unreliability of the measurements of the size of the uterus when taken in relation to the navel, for whereas the usual height of the lower border of the navel was 6 in. above the pubes, in a considerable number of women it measured from 5 to 7 in. Added to this was the difficulty of certain knowledge of the duration of pregnancy. At the same time he was quite prepared to agree with Dr. Briggs that a uterus containing a cystic mole was often smaller than a normal pregnant uterus of the same period. Dr. Griffith was not surprised that Dr. Briggs avoided the question of diagnosis. His own experience was that when the cervix was closed his diagnosis had usually been at fault.

Dr. BLACKER, after expressing appreciation of Dr. Briggs's paper, said that for a long time past he had taught that the size of the uterus might be greater or less than, or equal to, the size of the organ at the corresponding period of pregnancy. Dr. Briggs's paper brought out the fact that in a considerable number of the cases the uterus was definitely smaller than it ought to be. At the same time he thought that in many of the cases quoted the mole had been retained some time in the uterus, and this might explain the apparent anomaly. During the period of retention the mole might have undergone retrogressive changes and shrinkage. He gathered from some of the specimens in which the uterus was larger than normal that Dr. Briggs thought some of this increase due to the presence of haemorrhage *in utero*, but the case of hydatidiform mole he had shown before the Section proved conclusively that the undue enlargement was due to the size of the mole itself. He thought Dr. Briggs had quite proved his point.

The PRESIDENT had seen several cases of hydatidiform mole where the uterus was not enlarged beyond the supposed period of gestation. He was surprised that one of the cases of chorion-epithelioma had been preceded by one of the smaller varieties of hydatidiform mole. He had thought it probable that the larger hydatidiform moles, showing more activity of growth and greater vascularity, were more liable to develop chorion-epithelioma than the smaller and more quiescent ones. He congratulated Dr. Briggs on his valuable contribution to their knowledge of the subject.

Dr. BRIGGS, in reply, admitted the difficulty, and sometimes the impossibility, of substantiating statements as to size changes in the uterus. These drawbacks, however, cut both ways, affecting oversize and undersize, principally in changes of slower and lesser degrees, but the predominance in the long run would come out. Dr. Briggs explained that he had himself yielded tardily to an eighteen years' acquaintance with undersize, because he had seen it repeatedly verified, and the intrauterine haemorrhage recently observed in Case 1 encouraged further inquiry.

CLINICAL SECTION.

Friday, January 12th, 1912.

Sir WILLIAM OSLER, President, in the Chair.

Laparotomy in Pneumococcal Peritonitis.

Dr. H. CHARLES CAMERON, in an elaborate paper on the relative value of immediate and delayed laparotomy for pneumococcal peritonitis, based on an analysis of the records of Guy's Hospital, said that from a consideration of the age and sex, the onset with rigors or herpes labialis, the evidence of preceding colitis, the simultaneous pleurisy, pericarditis, or pneumonia, the great and rapid exudation of fluid into the peritoneal cavity, the high temperature at the onset, it was often possible to make a diagnosis with some certainty. As for the question of the advisability of submitting those cases to laparotomy at the onset of the symptoms, the peritonitis was always the result of pneumococcal septicaemia, and this, if it did not end in death, would appear to run a course usually of some two to three weeks. When recovery did take place, one or more residual collections of pus were found. Such of the cases suggested the possibility that recovery might take place without any operation at all; but recovery, either with or without residual abscess, must be regarded as a rare and unfortunate chance. If immediate laparotomy could claim to save even a small percentage of cases, there could be little doubt that it should always be advised. He found that eight cases admitted in the acute stage were not operated upon before death. In seven of those there was present pleurisy, pneumonia, pericarditis, or endocarditis, as well as peritonitis. The eighth case died as soon as admitted. Twelve cases were submitted to immediate laparotomy. Nine of those died—four on the day following operation, the remainder within a few days. Three cases recovered, but in all three the laparotomy performed at the onset of symptoms failed to produce immediate improvement. The patients passed through a long and critical illness, developed on convalescence the signs of abdominal abscess, and recovered after the evacuation of the pus. No case recovered without the formation of residual abscesses and without a second operation being required. It would appear that those cases of pneumococcal peritonitis which recovered were those which passed successfully through the pneumococcal septicaemia. After the termination of the acute septicaemia only a minority of cases died as a result of the failure to secure drainage of the residual collections of pus. He thought that it was likely that in certain cases it was the right course to pursue. He could find no evidence that establishing drainage by laparotomy at the onset of the disease increased the chance of recovery from the septicaemia, or helped to cut short the process in the peritoneal cavity. On the other hand, he thought that there were cases so ill at the onset of the disease that laparotomy might turn the scale against recovery, and he suggested that in those cases it might be wiser to wait until the septicaemia was at an end, and until the disease had become local to the peritoneum, just as was done in dealing with the empyema which followed upon pneumonia.

PATHOLOGICAL SECTION.

Tuesday, January 16th, 1912.

Professor R. T. HEWLETT, President, in the Chair.

Amaurotic Idiocy.

Dr. J. TURNER recorded two cases of amaurotic idiocy. The histological changes present in the central nervous system were pathognomonic of the condition, and were those already well known. Glia proliferation was not an essential element in the lesion. One patient, as in practically all the recorded cases, was Jewish, but in the other this nationality could be definitely excluded. The speaker thought that in the second of the two patients there were signs suggestive of syphilis, though this disease had been denied by certain observers to be a factor in the condition.

Micrococcus Zymogenes.

Dr. J. A. BRAXTON HICKS recorded a case of ulcerative endocarditis in a woman, aged 40, in whom the above rare micro-organism was cultivated from the blood during life. A vaccine prepared from it produced no obvious

result. Death occurred somewhat later from cerebral embolism. The micrococcus was Gram positive; it liquefied blood serum.

Phagocytosis from the Adsorption Point of View.

Dr. J. C. G. LEDINGHAM gave the results of observations suggesting that the phenomenon of phagocytosis was akin to adsorption, as exemplified in the dyeing of silk with picric acid, etc. The sensitized bacteria congregated around the leucocyte, and were taken up according to the numbers present in the ratio of an adsorption process. It was unnecessary to suppose that the ingestion was purposive.

LARYNGOLOGICAL SECTION.

AT a meeting on January 12th, Mr. MARK HOVELL, Vice-President, in the chair, the following were among the exhibits:—Dr. ANDREW WYLIE: (1) A case of *Paralysis of the left vocal cord*, in a woman aged 21 years, which raised the question of paralysis of the recurrent nerve as a consequence of injury. Several members cited cases of this condition which had followed contusions of the neck. (2) A case of *Multiple laryngeal papillomata* in which repeated removal of the growths had failed to bring the disease to a standstill. The advisability of thyrotomy in such cases was discussed, and negatived by most of the speakers. (3) A case of a *Horny white laryngeal growth* which was situated on the right vocal cord. It was regarded as malignant, although probably of a mild type. The CHAIRMAN said the appearance was rare, and cited a case under his own care in which, after removal for a second time endolaryngeally, the growth did not recur. Dr. W. H. KELSON: A case of *Swelling of the right ventricular band* in a syphilitic subject. Potassium iodide had been administered without effect. Dr. JOBSON HORNE: A case of *Atrophic rhinitis* with nasal obstruction in a child aged 7 years. Mr. CLAYTON FOX favoured its treatment by cold paraffin injections. Messrs. E. WAGGETT and EDWARD D. DAVIS: A case of *Leontiasis ossea* affecting the nasal cavities. There were no signs or history of syphilis, but the Wassermann reaction was positive. Dr. DAN MCKENZIE: Two children who had suffered from *Tuberculosis of the retropharyngeal lymphatic glands*. Abscesses had formed in each case, one pointing in the posterior pharyngeal wall, and the other behind the sterno-mastoid in the neck. Mr. FRANK ROSE (for Mr. HARMER): A woman, aged 61 years, with a *Swelling in the region of the left tonsil*. It was ulcerated on its antero-inferior surface, and was referred by the patient to an injury caused by a crust of bread which had stuck in the tonsil. Dr. DUNDAS GRANT: A case of *Tuberculous laryngitis* in which there had been a herpetoid appearance in the shape of small blisters on the infiltrated left side of the larynx. Later these became oval lenticular ulcers. They had caused intense pain, which was relieved by the inhalation of equal parts of anaesthesin and orthoform.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Wednesday, January 17th, 1912.

Mr. J. M. COTTERILL, President, in the Chair.

Vaccine-Therapy.

DR. G. L. GULLAND continued the discussion on this subject, adjourned from the last meeting. In tuberculous cervical glands he had obtained satisfactory results with tuberculin, given in small doses, and continued for a long time, provided the glands had not reached the stage requiring surgical treatment. In pulmonary tuberculosis it was contraindicated in febrile cases, or in those doing well with other treatment; but in "stuck" cases, where open-air treatment had carried improvement to a certain point, it sometimes yielded good results. His experience had been largely with T.R., and his method of administration had been to give it in small doses, to avoid producing reaction, and continue its use for a long period. Special caution was required in its use in children.

Dr. T. SHENNAN said the highly toxic qualities of vaccines were not realized by many physicians. He was becoming impressed with the value of mixed vaccines in many cases, having obtained decidedly good results with combined *Micrococcus catarrhalis* and pneumococcus, and he had lately been trying mixtures with *B. proteus*, although its pathogenicity was not yet established.

Dr. I. S. STEWART had obtained better results with streptococcal vaccines than with any others. In wounds the relief of pain was almost immediate, and in old tuberculous sinuses infected with streptococci the results were very good. Pneumococcal vaccines given before the third day in pneumonia had been associated in his series of cases with an early crisis about the fifth day; here his doses never exceeded 10 million. In *B. coli* infections autogenous vaccines were sometimes good, while "stock" preparations generally failed. All over there was a tendency to give too large doses of vaccines. Massage and passive movements were often valuable adjuvants where the blood supply to the affected part was defective.

Mr. L. C. PEEL RITCHIE said that vaccination was now a routine treatment in all infective conditions where the cause was known, but it should always be used in conjunction with other treatment. The present chaos with regard to dosage was due to the enumeration method, which disregarded the varying size of bacteria. A much more accurate method was that of weighing.

Dr. R. C. LOW described his experience of vaccines in furunculosis, in which the results were very good; in sycosis, in which cure was only obtained by a prolonged course of injections, in conjunction with other forms of treatment; and in lupus, in which not a single case of cure had been obtained.

Dr. W. E. C. DICKSON said the varying size of bacteria was a less important factor than variation in virulence. His own experience coincided with that of others, in that the most striking success had been in staphylococcal conditions.

Dr. A. D. FORDYCE said that, with regard to tuberculin, he occupied the same position as Dr. Gulland. But, with the exception of furunculosis and some cases of empyemata with secondary staphylococcal infection, he had not obtained success from the use of vaccines.

Mr. D. P. WILKIE spoke of the prophylactic use of vaccines in abdominal cases of operation in two stages, where their employment in the interval diminished the probability of a peritoneal infection following the second operation. But where peritonitis was already present the case was not for vaccination, but for serum-therapy.

Mr. W. J. STUART spoke of cases of multiple tuberculous sinuses of the neck, where there was board-like infiltration of the tissues and a secondary streptococcal infection of the discharge. Here surgical measures were hopeless, but mixed vaccines had in his experience been unmistakably successful.

Dr. RITCHIE replied.

Trauma as a Factor in Disease.

Dr. ALEX. JAMES said the results of trauma might sometimes be analogous to the demagnetization of a bar magnet produced by a blow, the tissue showing no apparent derangement of structure, but suffering some alteration and lowering of vitality. Of all tissues suffering in this way, the nervous system afforded the best examples, because the results were to be seen not only in nervous but in many other tissues. He then cited illustrative cases: an obstinate onychia associated with involvement of the median nerve in a cicatrix and disappearing with its release; a case of Raynaud's disease in one hand associated with an old bullet injury of the part and followed by the appearance of a similar condition in the other hand, the condition being completely relieved by surgical treatment; and a case of amyotrophic lateral sclerosis developing in a miner as the result of a fall of coal, multiple lipomata appearing concurrently under the skin of the abdomen and back. As an example of mental shock or trauma, he gave a case of paralysis agitans appearing suddenly in a station-master after a severe mental strain. He had analysed his hospital records of certain diseases with regard to this factor of trauma. Of 27 cases of locomotor ataxia, 9 had a history of trauma, but none were causal. In 44 cases of disseminated and lateral sclerosis there was such a history in 11 cases, and 6 of these were possibly causal. In 12 cases of paralysis agitans, 2 had definitely followed trauma. Such cases required a very careful examination of all circumstances, for it was certain that in many the only effect of trauma was to bring home to the patient certain symptoms already in existence. The mental attitude of

the patient, especially in compensation cases, required the most careful study.

Dr. E. BRAMWELL said that the cases of Raynaud's disease and multiple lipomata which Dr. James had described were unique. He then cited a case of hemiplegia with anaesthesia following mental shock, and referred to cases of functional paralysis following trauma.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Friday, January 5th, 1912.

A. J. HORNE, M.D., P.R.C.P.I., President, in the Chair.

Chorion-epithelioma with Secondary Deposits.

A SPECIMEN was shown by Dr. H. JELLETT:

A woman aged 39 was admitted to the Rotunda Hospital on September 3rd, 1911. She had been married for twelve years, and had had seven children and one abortion. She believed her last pregnancy to have terminated in June, 1910, but on questioning her she said that she had not menstruated between January and May, 1911, and that in May she had had severe haemorrhage. Since that time haemorrhage had been constant. On examination the following day the uterus was found normal in position and enlarged to the size of a two months pregnancy. On the walls of the vagina were three small swellings which were purplish in colour, and resembled small haematomata or thrombosed veins. A diagnosis of possible pregnancy was made, and one of the swellings was removed for examination. Dr. Rowlette reported that they were cystic masses filled with blood clot. The surface epithelium was regular, and the deeper tissues were infiltrated by masses of very irregular flat cells with large blood spaces. A diagnosis of chorion-epithelioma, or mixed-celled sarcoma, was made by him. On September 11th the uterine cavity was explored and pieces curetted away for examination. These were found to be of a similar character to the vaginal swellings. The next day the patient had a cough with expectoration containing a considerable quantity of blood. It was decided to give her the chance of hysterectomy. On the 14th the uterus and ovaries were removed as extensively as possible. The uterus was enlarged to the size of a small fetal head, with a very distinct tumour on its left side. The patient stood the operation well, but her lungs rapidly got worse and she died two days later. At the autopsy the lungs were found to be studded all over with small tumours, corresponding in appearance and characteristics with the uterine tumour and the vaginal metastases. Between September 4th and 11th the uterine tumour had increased considerably in size, and an additional vaginal metastasis had formed. The uterine tumour and all the metastases consisted of blood and infiltrating masses of cells derived from Langhans's layer. There were no syncytial masses and no pieces of chorionic villi.

A portion of the tumour was submitted for diagnosis to Professor Pick, of Berlin, and he confirmed Dr. Rowlette's diagnosis of chorion-epithelioma derived practically entirely from Langhans's layer.

Dr. ROWLETTE said the case was interesting from the pathological point of view, inasmuch as it was not quite typical. The tumour seemed to consist of one set of cells —Langhans layer—and not of other parts of the ovum, as generally occurred. Well-formed villi were very often seen, but in this case no villi were to be found.

Dr. NINIAN FALKINER said that, according to his information, this disease was identified about 1888 by Dr. Sangar, of the United States. Out of a record of 127 cases the mortality was 59 per cent. There was a third name for the disease which explained its pathology—syncytioma.

Dr. GIBBON FITZGIBBON inquired as to the pregnancy after which the tumour developed. With regard to the statement that it was the only specimen of the kind shown for some years, he thought there was one shown in February, 1904, where the symptoms of the disease developed after the removal of a hydatidiform mole. The patient complained of haemorrhage, starting three weeks after the removal of the mole, and continuing until admission to hospital five weeks later. The uterus was curetted, and a perforation of the muscular wall discovered. The uterus was removed, and the condition diagnosed as chorion-epithelioma. There were no metastases, and the patient was quite well twelve months afterwards.

Dr. JELLETT, in reply to the remarks, said the term "syncytioma" was not applicable to all cases, so had been given up. As to the history of previous pregnancy in this case the patient stated that her last pregnancy was in 1910, but all her symptoms dated from May last, and previous to that there was a history of three months' amenorrhoea.

Myoma undergoing Sarcomatous Degeneration.

Sir WILLIAM SMYLY said that his views with regard to the treatment of myomatous tumours of the uterus had undergone a gradual change. Almost every case that required treatment he considered was best treated by operation. Myomectomy, which, owing to improved methods of suturing and the introduction of rubber gloves, was scarcely more dangerous now than hysterectomy, should be generally adopted in women within the child-bearing period of life. He reported a case in which a myoma had been diagnosed twenty years previously, and had caused little inconvenience until about Christmas, 1910. In April a second lump formed in the patient's left side and became very painful. On opening the abdominal cavity the parietal peritoneum was covered with malignant growths. A coil of small intestine was involved in the tumour, and it was necessary to resect about a foot of intestine. A large portion of the parietal peritoneum was also cut away and the abdomen closed. The primary result was good, but after a few weeks the disease again began to show its presence, and she died in about four months. The lesson that he drew from this case was the importance of early interference.

Professor ALFRED SMITH said he would treat each case on its merits. He instanced a case of a patient who had consulted him, in which he diagnosed a fibromyomatous tumour, and advised its removal, but she being anxious that she should become a mother palliative treatment was adopted. She was afterwards confined of a full term child. This, he thought, should make one pause before telling a patient that every fibroid tumour should be removed if it means removing the uterus. He considered that no operation gave better results in practice than myomectomy. If a patient had been recently married an interval of one or two years would be a safe margin to allow her to run without taking any risk provided the tumour was not increasing or causing trouble.

Dr. JELLETT thought, speaking generally, one might say that if a married woman within the child-bearing period had a myoma of the uterus which would not prevent pregnancy going to the full term, it could be removed by myomectomy, and that the operation was indicated. If it was found at the time of the operation that the tumour could not be removed by myomectomy it was most improbable that pregnancy would occur and continue to full term. He advised early operation in all cases, because operation was then more easily and safely carried out. As regards the effect of myomectomy on future pregnancy, frequently cases were seen in which pregnancy occurred and continued satisfactorily.

Dr. SOLOMONS said that during his term at the Rotunda Hospital he saw a good number of cases of women who became pregnant after myomectomy, and in at least three of these cases about one-third of the cavity of the uterus had been removed, yet the patients had quite uneventful confinements. In a case of myoma undergoing sarcomatous degeneration on which he had operated, the intestine was adherent, and he separated this before removing the tumour. He asked Sir William Smyly whether he would, as a rule, remove the intestine with the tumour before previous separation.

In reply, Sir WILLIAM SMYLY said that as to the merits of any case they could not tell what would happen to it—it might get well at the menopause, or it might, and probably would, get worse. He recognized the importance of preserving the power to bear children, and he believed that myomectomy would rather increase fertility, and should be advised where practicable.

Dr. ROWLETTE remarked that he thought the whole tumour was sarcomatous.

Papyraceous Fetus Expelled before Living Child.

Sir WILLIAM SMYLY related a case and read a paper. He said in January, 1911, the patient conceived, and though she twice threatened to abort she went to the end of the seventh month. She then expelled a papyraceous fetus, but the placenta did not come away. Next day it was decided to divide the funis as high up in the cervix as possible in the hope of saving the second child. On the third day a septic fever commenced, and on the fourth had considerably increased. She was then removed to a nursing home, and the second child was delivered by bipolar version. The placenta and membranes of this

second child, which died during the extraction, were expelled in about half an hour, and appeared to be fresh and normal, but as there was no sign of the other placenta following, the hand was introduced, and it was found firmly adherent in the neighbourhood of the right cornu of the uterus. The patient made a good recovery.

Professor ALFRED SMITH considered the cause of the fetus becoming papyraceous was the insertion of placenta in the cornu of the uterus. The practical point appeared to him to be whether interruption was justified or not. So far as could be gathered, the placenta of the papyraceous fetus was not the cause of the trouble. Whether the fetus came first or afterwards was a mere accident. He asked, Would one in a similar case be justified in emptying the uterus? He would like to know what Sir William Smyly considered the source of the toxin.

Sir WILLIAM SMYLY, in reply, said he attached more importance to the pathological condition of the placental site than to its anatomical position. The fact that the papyraceous fetus came first was the important feature of the case. Had it not done so there would have been no trouble. As to the origin of the septic fever, it no doubt originated in the cord, which was lying in the vagina for twenty-four hours before it was divided.

BATH CLINICAL SOCIETY.

AT a meeting on January 5th, Dr. PRESTON KING, President, in the chair, the following were among the exhibits:—Dr. R. WATERHOUSE: A case of *Pigmentation of the trunk, neck, and shins* in a girl aged 27, epileptic eleven years and very simple. For ten years she had taken bromides as an out-patient, and had forty, fifty, or more fits every year. Eleven months ago she commenced to take drachm doses of syrupus ferri phosphatis co. three times a day in addition, and three weeks later 4 minims of Fowler's solution were added to the mixture. From that time to the present no fit occurred, but a week ago, on account of a complaint of abdominal pain and irritability of the bladder, an examination of the abdomen was made and pigmentation noticed. There was no keratosis of the palms or soles. The deep reflexes were markedly exaggerated, and there was a tendency to ankle clonus, but the reflexes were flexor in type. The friends had only noticed the darkening of the skin within the last year. Dr. V. WILEY: A man, aged 41, a French-polisher by trade, suffering for the past eighteen months from *Occupation neurosis*. He complained of stiffness and numbness of the right hand, and was unable, with his eyes closed, to distinguish the shape or name of objects placed in that hand. Round objects he called square. There was no wasting of muscles nor trophic change, but the radial reflexes were lost on both sides. Mr. H. G. TERRY: A *Foreign body removed from the bladder* of an old man, 4 in. of the stem of an ordinary thermometer. It was used by the patient for sounding for stone. Mr. A. DE V. BLATHWAYT: The lower half of the spinal column of a woman aged 29. Five years previously she fell out of a window and sustained a *Comminuted fracture of vertebrae* (the twelfth dorsal and first lumbar), with some dislocation. There was complete paralysis below the lesion, and laminectomy was performed. After two years she was able to resume her occupation as a servant, her only disability being prolapse of the uterus; this was improved by operation twelve months before her death, which was due to suicide by drowning. The PRESIDENT recorded two cases of *Treatment by vaccines*. In one the patient was himself. For years he had suffered from bronchial catarrh and bronchitis, having had one or more yearly attacks which had laid him up for two or three weeks at a time. During an acute attack in October, 1910, a vaccine was prepared from the growth obtained from the sputum. The treatment was begun while the patient was still confined to bed, with an evening temperature of 100° F. There was definite reaction, the temperature rising one degree the first night, and less afterwards, till eight or ten injections had been given. A 50-million dose was used, and was given every fourth day and continued up to Christmas. The acute attack was cut short from the usual two or three weeks to six days, and since then there had been no further acute attacks down to January. During the last two winters he had suffered from slight colds, which had aborted after a few days.

GLASGOW OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

AT a meeting on December 13th, 1911, Dr. A. W. RUSSELL, President, in the chair, Dr. WILLIAM RITCHIE read notes of a case of *Stone in the bladder*, in which recurrence took place ten months after cystotomy had been performed. He thought this was due to the site of the calculus not having been sufficiently curetted after removal of the stone. After the first operation the repair of the fistula was not satisfactory, this he attributed to the fact that the fistula had been immediately closed, and that the accompanying cystitis had not been cured by prolonged drainage as was done at the second operation. Dr. NIGEL STARK, in a paper on *Uterine fibrosis and allied conditions*, pointed out the want of a standardized and universal nomenclature in gynaecology, and the confusion that resulted. Many text-books made no mention of the term "fibrosis," but connected all the symptoms now ascribed to it to chronic endometritis. By fibrosis was meant increase of fibrous tissue, or replacement of muscular by fibrous tissue. It was always accompanied by some increase in the size of the uterus, and on curetting hardly any mucosa came away. The clinical features were haemorrhage, leucorrhoea, dysmenorrhoea, and pain. Hysterectomy had, therefore, come to be the favourite method of treatment, but he deemed it too drastic, and advocated the excision of a wedge-shaped portion of the body of the uterus. This operation — uteroplasty—he had performed on eight occasions. Mr. BALFOUR MARSHALL preferred hysterectomy as haemorrhage had recurred after uteroplasty. Dr. MCILROY condemned the removal of the ovaries. Dr. RUSSELL said he treated this condition by vaginal hysterectomy.

LONDON DERMATOLOGICAL SOCIETY.

A MEETING was held on January 16th, Dr. MORGAN DOCKRELL, President, in the chair. A reception by the President, and an inspection of the laboratories, *x* rays, light, and electric departments preceded the meeting. The PRESIDENT exhibited a case of *Dermatitis herpetiformis* in a woman aged 44, sent to him by Dr. Dornhurst, who was admitted into the hospital on January 5th. For a week before admission blebs had developed, on intensely itching papules, which had been present for three weeks, and were distributed all over the body in groups. He admitted that this was one of the very rare cases of acute dermatitis herpetiformis, and pointed out the following interesting features in support of the diagnosis: First, the grouped macules and papules which were present in all regions of the body. Next, the small and large bullae developing daily in crops on these primary lesions. Lastly, the bleeding patches left when the bullae ruptured, indicating so markedly the difference between the bulla of pemphigus, which has for its roof the stratum corneum and lucidum, and for its floor the stratum granulosum and mucosum, while the bulla of dermatitis herpetiformis has for its roof the epidermis, and its floor the corium, the dilatation of the blood vessels in it giving rise to the haemorrhagic condition seen in this disease, and not found in pemphigus. Dr. DOCKRELL also demonstrated cases of *Acne varioliformis* and *Acne necrotica*. Dr. W. GRIFFITH showed cases of *Dermatitis herpetiformis, exfoliative dermatitis*, and *lichen planus*. Dr. J. L. BUNCH exhibited a case of extensive *Lupus vulgaris*, and discussed the methods of treatment. Dr. W. KNOWSLEY SIBLEY showed a case of *Severe pitting of the face by small-pox*. The attack occurred eight years ago, and photographs of the condition when the patient came under treatment were shown. Dr. Sibley had been treating the case for nearly a year by the hyperaemic method by means of suction cups, and had produced great amelioration. Other methods of dealing with scar tissue had been employed in the same case—namely, cataphoresis of sodium chloride solutions, small doses of *x* rays, hypodermic injections of fibrolysin,

and exfoliation by resorcin. Dr. Sibley considered that the hyperaemic method gave the best results. Dr. Sibley also showed three cases to illustrate the effect of treatment of *Multiple lupus* by solid carbon dioxide followed by *x* rays. Dr. HAMPSON exhibited a case to illustrate the method of *Epilation by x rays*. Dr. GALBRAITH exhibited two cases of *Seborrhoeic alopecia*, which he had treated with bacterial vaccines. Dr. J. L. BUNCH read a paper on *Prurigo and itching diseases of the skin*. The discussion on it was postponed until the next meeting.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.

AT a meeting held on January 9th, Dr. CONSTANCE LONG, President, in the chair, it was resolved that a message of sympathy and condolence be sent to the relatives and friends of the late Dr. Sophia Jex-Blake. In supporting the resolution, Mrs. SCHARLIEB spoke of the debt all medical women owed to Dr. Jex-Blake for the part she played in the struggle in Edinburgh; and Dr. MAY THORNE paid a tribute to the womanliness of her character, to her powers of organization, and to the steadfast purpose of her aims. Dr. EMILY MORRIS read a paper entitled *Some work on rheumatoid arthritis at the Research Hospital, Cambridge*, in which she described the various forms of the disease as met with in the chronic state, the description being based upon the changes found both clinically and *post mortem* in a large number of cases. Three types of cases were found: (1) Those in which no changes could be demonstrated in the bones and cartilages by *x* rays or on *post-mortem* examination. (2) Those in which rarefaction and atrophy of bone were predominating features as seen on *x*-ray examination. There was also atrophy of the intra-articular cartilages which might entirely disappear; the ends of the bones were often worn away, and bony ankylosis sometimes occurred. Fibrous adhesions were found in some cases, and muscular wasting was practically always present. (3) Those in which increased deposit of bone was the chief characteristic, leading to lipping and the formation of osteophytes. The cartilage was either hypertrophied or atrophied, or it might be thickened in some parts and worn away in others. Adjacent articular surfaces of bone became worn down, sclerosed and often highly polished. Bony ankylosis occurred, and was perhaps more frequent in the finger joints than in larger ones. Obvious muscular wasting was not common. This group, called by Goldthwait in 1904 "hypertrophic rheumatoid arthritis," appeared to be identical with the osteoarthritis of more recent writers, but one point which seemed to have been overlooked by most observers was the close similarity between the changes found in this form and those seen in chronic gout. This resemblance was so marked that in many cases it was impossible without a clinical history to distinguish between the two conditions. Even on *post-mortem* examination the difficulty remained, since in many cases which had been confidently diagnosed as rheumatoid arthritis in patients who had never had an attack of gout the joints had been found to contain deposits of sodium biurate. A series of investigations had been made upon the purin metabolism in a number of cases of all forms of rheumatoid arthritis, and the results compared with those obtained from a similar investigation in cases of chronic gout. The results were unsatisfactory; although the purin metabolism in cases of rheumatoid arthritis differed in some respects from that in normal individuals, and resembled that found in cases of chronic gout, this resemblance to gout was no more marked in the hypertrophic than in the other forms of rheumatoid arthritis. A series of lantern slides was shown illustrating the above-mentioned conditions. Reference was then made to the results of various forms of treatment which had been tried at the Research Hospital, Cambridge.

THE late Surgeon-Major-General Robert Wyatt Meadows, who served in the Crimean campaign and in the Afghan war of 1879–80, and later was Principal Medical Officer at Devonport and Gibraltar, left an estate which has been sworn at a net value of £25,260. After his retirement from the Army Medical Staff he took up his residence at Saltash, in Cornwall. His death occurred last November.

Reviews.

THE P.M.O. IN THE CRIMEA.

THERE are some men whose whole lives give the lie to Johnson's famous lines "Slow rises worth by poverty depressed." Such a one was Sir John Hall, Principal Medical Officer of the British troops in the Crimean war, who has recently been made the subject of a most interesting biography by Mr. S. M. MITRA, the well-known Hindu littérateur.[1] He was a striking example of a certain type of Englishman, who, without fortune, name, or influence, earns for himself a niche in the Temple of Fame through his own unaided exertions and personal merits.

The son of parents in modest circumstances, Hall was cast early upon his own resources, and proved himself worthy to be ranked by posterity "among the heroes and the wise" by the strong sense of duty and utter disregard of self which characterized him throughout the whole of his long life, and helped to raise him to the highest position in the medical service of the army.

John Hall was born in 1795 at Little Beck, in Westmorland, where his father owned a farm. Through his mother he was connected with the Fothergills, a well-known Westmorland family; "but," says his biographer, "the circumstances of the family rendered it necessary for him to make his own livelihood as soon as possible, and, in the absence of any powerful interest at his back, to trust to his own exertions for his success in life." For this purpose, after leaving the Grammar School at Appleby, he studied medicine at Guy's and St. Thomas's Hospitals, and entered the Army Medical Service six days after the battle of Waterloo, when he was barely 20 years of age. He was sent to Belgium in the capacity of Hospital Assistant in the General Hospital at Brussels; and from that time onward, for over forty years, he was almost continuously abroad on foreign service. To this circumstance, perhaps, is due the fact that he did not take his M.D. degree until many years after joining the service, when he was already a middle-aged man, and a Fellow of the Royal College of Surgeons of England. Hall served his apprenticeship as an army doctor amongst the sick and wounded from the field of Waterloo, and only returned to England when the British troops were withdrawn from Flanders early in the following year. He was then, like many of his colleagues, placed on half-pay; but in the autumn of 1817 he was recalled to duty and sent to Jamaica. There he remained, with an occasional leave of absence, until 1832, winning golden opinions from his superior officers by his devotion to duty and his gallant behaviour during the terrible epidemics of yellow fever which ravaged the island in 1819 and 1825. In one of these his professional zeal nearly cost him his life. Promoted to the rank of Assistant-Surgeon to the Forces in the West Indies in the year 1822, and five years later to that of Surgeon to the Forces, he was recalled from Jamaica in 1832, and spent the next fourteen years at various stations in England and Ireland, besides holding appointments at Gibraltar and Barbados.

Promoted in 1846 to the rank of Deputy Inspector-General of Hospitals, he was sent to the Cape in the same year as Principal Medical Officer, and arrived just in time to take an active part in the South African wars of 1846–48 and 1850–52. His position was one of considerable responsibility and difficulty, but he quickly earned the regard and admiration of all about him. Besides serving in the Kaffir wars of 1847 and 1851, for which he was thanked in a General Order and decorated with a medal, he accompanied Sir Harry Smith across the Orange River in the expedition against the Boers in 1848, and was present at the battle of Boom Platz, his name being mentioned in dispatches "for his eminent services in the field." Not the least interesting portion of his biography is that which relates to these wars in South Africa, the account of which is taken, for the most part, from Hall's own diary and letters written when he was actually in the field.

[1] *The Life and Letters of Sir John Hall, M.D., K.C.B., F.R.C.S.* By S. M. Mitra. With an introduction by Rear-Admiral Sir R. Massie Blomfield, K.C.M.G. With portraits and illustrations. London, New York, Bombay, and Calcutta: Longmans, Green and Co. 1911. (Fcap. 8vo, pp. 586; illustrations 8. Price 16s. net.)

He was not left in Africa to see the end of the struggle, but was transferred to India in 1851 to take up the duties of Principal Medical Officer in the Bombay Presidency; and he remained in India until recalled to Europe three years later as head of the Medical Department of the British troops in Turkey. "It was an immense gratification to Dr. Hall," remarks Mr. Mitra, "to be officially informed from Army Head Quarters that he had been selected by Queen Victoria for the post of Principal Medical Officer of the British Army"; but his gratification must have quickly changed into dismay when he realized the confusion which reigned in the scene of his labours. Mr. Mitra tells us that, "when congratulated by his friends in India on his appointment, he could not help observing to them that, though the honour was great and the appointment flattering, he would willingly forfeit one year's pay could he escape the labour and anxiety he knew he should have to undergo in the performance of his duty." War had already been in progress for a couple of months when Dr. Hall arrived at Constantinople, having been left "in utter ignorance of the strength of the force to be employed, and of all the details of his own department." Previous experience, however, had taught him that all the minor branches of the Medical Department had been cut down in the British Army until they were practically non-existent, and that his first business would be to create them afresh—no easy task on active service with totally inexperienced colleagues, a hostile press at home, and patients lacking everything save the barest necessities of life.

This is neither the time nor the place to enter into a discussion on the miserable blunders of the Crimean campaign; but it should be realized once for all that whoever was responsible for them it was not the Principal Medical Officer, who, as his biographer justly observes, was as "dependent on the orders of those in high authority responsible for the movements of the whole army . . . as the youngest subaltern or the rawest recruit in the forces." Hampered, therefore, as he was on every side, it is all the more remarkable that Hall was able to accomplish as much as he did for the comfort and well-being of his patients, and bring order out of the chaos which had reigned on his arrival, so that by the end of the campaign the hospitals under his care were admittedly in far better condition than those belonging to the French, which during the war had been held up to admiration by the English press. Dr. Hall's untiring zeal in the fulfilment of his arduous and often unpleasant duties during the two years he spent in the Crimea was rewarded before he left the seat of war by his investiture as Knight Commander of the Bath; whilst after his return to England he was created Officer of the Legion of Honour, and Chevalier of the Third Class of the Turkish Order.

The Crimean war was the last incident of Sir John Hall's public career. The two years of constant anxiety and overwork had told severely on his health, and a stroke of paralysis in 1859 compelled him to retire from the service. He spent the last few years of his life wandering about the Continent with his wife and family, and died after a short illness at Pisa, on January 17th, 1866, at the age of 71.

It is strange to note that this humane and tender-hearted man, whose kindness and consideration for all about him was one of his most strongly-marked characteristics, was yet strongly opposed to the introduction of chloroform in military hospitals. In a letter written to Lord Raglan during the war, he solemnly "cautioned medical officers against the use of chloroform in the severe shock of serious gunshot wounds," as he thought few would survive where it was used. But as public opinion he knew was against him he could only caution medical officers and urge them narrowly to watch its effects, "for, however barbarous it may appear, the smart of the knife is a powerful stimulant, and it is much better to hear a man bawl lustily than to see him sink silently into the grave." The world has progressed in this and many other matters since Sir John Hall's day, but even the most advanced of his up-to-date professional descendants might learn a useful lesson from the life of this fine old soldier. Not only the members of his own profession, but Englishmen in general owe a debt of gratitude to Mr. Mitra for his sympathetic and appreciative account of one whose proudest claim to honour lies in the fact that throughout his career he acted up to Wellington's ideal by doing his duty. The *Life*, which is profusely illustrated, contains a short introduction by Rear-Admiral Sir R. Massie Blomfield, K.C.M.G.

HYGIENE AND PUBLIC HEALTH.

A TEXTBOOK which in twenty years has reached its twelfth edition may safely be said to have created for itself a good title to be considered a standard work, and it may certainly be asserted that few diplomates of public health have prosecuted their studies without the assistance of WHITELEGGE and NEWMAN'S *Hygiene and Public Health*,[2] of which a twelfth edition has been issued. It must not be supposed that the position which the work has secured in the literature of the subject is a mere matter of chance. It is due to the industry of the authors in carrying out most thorough revisions in succeeding editions. The official positions occupied by each of the authors gives to the sections dealing with industrial hygiene and the hygiene of schools a very special value, though other departments of public health do not by any means suffer in consequence. The latest edition contains for the first time a chapter on military hygiene, which includes some excellent illustrations of camp latrines. A good account is given of the sanitary service of the Army, but no mention is made of the sanitary service of the Territorial Force, which was established a few years ago on the suggestion of Sir Alfred Keogh. The chapter on infection and immunity is a particularly lucid exposition of the subject, and the new section on the therapeutics of immunity expresses clearly the views which are generally accepted at the present time.

In most schemes of sanitary reform the medical officer of health and the sanitary engineer have a common concern. The one has to point out and to justify the need for improvement, and the other has to discover the best method of effecting improvement. It is quite proper, therefore, that each of these experts should have at least a nodding acquaintance with the special work of the other. In obtaining it they will receive a great deal of assistance from the *Encyclopaedia of Municipal and Sanitary Engineering*,[3] edited by Messrs. W. H. MAXWELL and J. T. BROWN, and which is described in the subtitle as a "handy working guide in all matters connected with municipal and sanitary engineering and administration." The editors have secured as contributors many writers who are entitled to speak with authority on the special subjects with which they deal. Among the medical writers are Lieutenant-Colonel R. H. Frith, R.A.M.C., Professor Henry Kenwood, Dr. David Sommerville, and Dr. J. C. Thresh. The article upon disinfectors, from the pen of Mr. Wolf Defries, is very clear and concise, and should convey even to the unlearned a definite notion of the *rationale* of steam disinfection. It is a pity, however, that the opening paragraphs of the article were not revised by a medical officer of health, for we could hardly then have had the misleading statement that a local authority "has to provide for the disinfection of all articles liable to retain infection." The statement is apparently justified by quotations from the Public Health Acts Amendment Act, 1907, which, however, is in force only in those districts where it has been adopted by the sanitary authority. The sections on vital statistics have been entrusted to Professor Kenwood, who has given an admirable exposition of the subject. In speaking of birth-rates, he makes no mention of the method of calculation as a proportion of married females between the ages of 15 and 45 years for legitimate births, and of unmarried and widowed females at the same ages for illegitimate births. When dealing with the enumeration of population he suggests that a simple method is to multiply the number of inhabited houses by the average number of persons known to occupy each house at the previous census, and advises that one individual should be added for each unoccupied house to account for caretakers and their families. This plan might answer in London and

[2] *Hygiene and Public Health*. By Sir Arthur Whitelegge, K.C.B., M.D., B.Sc.Lond., F.R.C.P., D.P.H., and Sir George Newman, M.D., D.P.H., F.R.S.E. London: Cassell and Co., Ltd. 1911. Twelfth edition, revised throughout. (Fcap. 8vo, pp. 770; figs. 50. 8s. 6d net.)

[3] *The Encyclopaedia of Municipal and Sanitary Engineering*. Edited by W. H. Maxwell, A.M.Inst.C.E., and J. T. Brown, M.R.San.I. London: Constable and Co. (Cr. 4to, pp. 561. Illustrated. 42s. net.)

some large towns, but in other districts it would lead to considerable error. Mr. R. J. Angel's article on swimming baths, with special reference to methods of purifying the water in them, takes up nearly twelve pages, and contains a mass of most useful information. Meteorology is admirably dealt with by Mr. W. Marriott, Assistant Secretary to the Royal Meteorological Society; and the articles on heating and hot-water supplies, by Mr. W. E. Fretwell, give a far better account of these two allied subjects than is to be found in most textbooks. The volume is well illustrated, and the numerous cross-references are evidence of careful and thorough editing.

Under the title, *Health and Disease*,[4] Dr. LESLIE MACKENZIE has gathered together a series of essays dealing in various aspects with preventable diseases. They are written for the general public, and the author has succeeded in reducing to very simple language an account of various biological and physiological processes. There is a practical note running through the whole volume. Of especial value is the chapter on the hygienics of milk, which deals with the problem of how to bring to the consumer clean, harmless, palatable cow's milk. The milking of cows is described as a process of unscientific inoculation of a pure, or almost pure, medium with unknown quantities of unspecified germs. The description of the milking of cows in a dirty, dung-laden cowshed by men or women with unclean hands and clad in filthy clothing is not exaggerated, nor is the author's suggested remedy an impossibility. He would have the principles of the laboratory applied to the protection of milk. It should be sold in airy, sunlit shops devoted exclusively to its sale, and fitted with impervious walls, shelves, counters, etc., the same care being taken as in the construction of an aseptic operating theatre. This is no doubt a counsel of perfection, but it is what should be aimed at.

It is not an easy task to write intelligibly on a scientific subject for readers who are only at school age; it is still more difficult when that subject embraces the structure and functions of the human body. There is the danger on the one hand of giving too little information, and on the other of saying so much that the mind of the reader becomes confused. In his *Health Readings*,[5] intended for elementary schools, Dr. C. J. THOMAS has successfully avoided these two pitfalls. In short, crisp sentences, and by the aid of parallels drawn from Nature, he has indicated how a healthy life may be secured, and in clear and forcible language has shown why his recommendations should be carried out. Although the volume is intended to be read by the children themselves, it should prove of great assistance to teachers in conducting health talks with their pupils.

THE LIMITATIONS OF TUBERCULIN TREATMENT.

A SMALL modicum of knowledge—proverbially a dangerous thing—on the subject of pulmonary tuberculosis is now common property. Hence the question is often put to the physician or the family doctor, "Do you advise the use of tuberculin?" The answer needs very careful consideration, and must be based on personal experience, if any, and upon the recorded observations of specialists. Evidence is rapidly accumulating, and amongst the latest contributions to general testimony we note a useful monograph, *Studies in Pulmonary Tuberculosis*,[6] by Dr. F. G. GRIFFITHS, of Sydney, N.S.W., containing not only a collection of convincing details of actual cases, but a general summary of modern thought on the specific treatment of the disease. A thoroughgoing supporter of the views expressed by Dr. Camac Wilkinson, and a former pupil of his, Dr. Griffiths is an enthusiast for tuberculin. He quotes cases that are entirely convincing, but at the same time he advises caution both in the selection of cases and in the dosage employed, and it may fairly be assumed that he, like others before him, has met with cases in which results have not realized anticipation. The ill success that attended the earlier efforts to use Koch's first tuberculin cannot be forgotten, and although in its present form it is infinitely less harmful, it nevertheless calls for the most careful consideration, founded on complete knowledge of the subject.

That its use in the very early stages of tubercle has apparently caused a complete cessation of the morbid process cannot be denied, and it would seem that in certain cases of more advanced destruction it may do material good, and even aid in the formation of fibrotic tissue. Those, however, who have had the largest experience of the specific treatment are unanimous in the opinion that tuberculin should not be used in cases of mixed infection.

It is precisely upon this point of mixed infection that we are apt to go wrong. Dr. Griffiths maintains that the conditions of mixed infection in consumption have been but little regarded by English writers. The consumptive patient who is coughing up purulent sputum containing a variety of pathogenic micro-organisms is spoken of as tuberculous, and no mention is made of the staphylococcic infection, which is probably the more active of the two processes. In such cases the use of tuberculin is contra-indicated, and it is well that this dictum, founded on sound experience, should be more generally recognized. If consistently acted upon, it follows that its use should be reserved for cases in the very earliest stages, and it is for the detection of such incipient cases that the tuberculosis dispensaries which are coming into existence in different districts in the larger towns are likely to prove of the highest value. As to the treatment of such cases by tuberculin without constant supervision opinions, are not as yet unanimous, but it cannot be too often repeated that it is in the early stages only that positive results can reasonably be hoped for, and medical men would do wisely to warn over-confident patients that they must not look to it for cure when the disease has passed the initial stage.

NEUROLOGY.

GREAT advances in the diagnosis of nervous diseases have been made in recent years, and the discovery, or at any rate the publication, of new physical signs asserted to be characteristic of this or that nervous disorder is almost a matter of weekly occurrence. An admirable opportunity for taking stock of the progress made in this direction is afforded by the publication of a new and complete German handbook on the diagnosis of nervous diseases.[7] The author, Dr. BREGMAN, is on the staff of the City Hospital for Jews at Warsaw, and is a pupil of Professor Obersteiner. Dr. Bregman has collected a great deal of useful information about the physical signs and symptoms of nervous disorders, mainly from the literature, but to no small extent also from his own experience. The book is divided into sixteen sections, in which he considers the motor, vasomotor, sensory, mental, and other lesions found in patients with nervous diseases, whether organic or functional. The general arrangement of the sections is excellent, and, where necessary, there is given at the beginning of each an account of the normal physiology or physiological working of the part of the nervous system under consideration. Details of the different physical signs that may be expected are set out, and the opinions of various writers as to their value are quoted. References to the literature are not given, nor, indeed, are they called for in a work of this type, but we cannot help thinking that the book would have gained in interest and value had the dates of the more important neurological advances and discoveries been inserted. As a whole, the volume gives a thorough and comprehensive survey of neurological diagnosis, and it is clearly written. To bring against it the charge that it is somewhat uninteresting in style would, perhaps, be unfair; for it is notoriously difficult

[4] *Health and Disease.* By W. Leslie Mackenzie, M.A., M.D., D.P.H., F.R.C.P.Edin., Medical Member of the Local Government Board for Scotland. London: Williams and Norgate. New York: Henry Holt and Co. 1911. (Fcap. 8vo, pp. 254. 1s. net.)

[5] *Health Readings.* By C. J. Thomas, M.B., B.Sc., D.P.H. London: Methuen and Co., Limited. 1911. (Post 8vo, pp. 144. 1s. 6d. net.)

[6] *Studies in Pulmonary Tuberculosis: its Dissemination, Specific Diagnosis, and Treatment.* By Frederick Guy Griffiths, B.A., M.D., Ch.M., Honorary Pathologist and Assistant Physician, Royal North Shore Hospital. Sydney: Boulton Bros., London: Baillière, Tindall and Cox. 1911. (Sup. roy. 8vo, pp. 120; 6 charts. 5s. net.)

[7] *Diagnostik der Nervenkrankheiten.* Von Dr. L. E. Bregman, mit einem Geleitwort von Hofrat Prof. Dr. H. Obersteiner. Mit 193 Abbildungen und 2 Tabellen. Berlin: S. Karger. 1911. (Royal 8vo, pp. 551. M. 12.)

to make a compilation attractive from a literary point of view, and much of the book necessarily consists of abstracts from the work of others. The printing and paper are excellent, and the illustrations, many of them original, are very fairly good. The book should prove very useful to the specialist in nervous diseases and to teachers.

A review of the second German edition of Dr. R. BING'S *Compendium*[8] has already appeared in this JOURNAL (1911, vol. ii, p. 218). Dr. ARNOLD'S translation has been made from the first German edition, which is but a little less complete than the second. As to the merits of Dr. Bing's book, little further need be said. The translation has been well done in most respects, but there is one in which he might have effected an improvement on the German original; and that is the textual explanations of some of the figures. A single example may be given. In Fig. 37, which gives a characteristic transverse section of the mid-brain, a certain nerve tract is labelled with the letters "F. c. p.;" the text beneath the figure does not explain what these letters mean, but adds, "Other abbreviations as in Fig. 36." Referring to Fig. 36, one finds no explanation of these letters in the text beneath it, but the words "Other abbreviations as in Fig. 35." Reference to Fig. 35 leaves "F.c.p." unexplained, but the reader finds "Other abbreviations as in Fig. 34." The letters are not explained in Fig. 34, but one is referred back in the same way as before to Fig. 33. Turning back to Fig. 33, one finds no explanation of "F.c.p.," but the explanatory text ends with the sentence, "Other abbreviations as in Fig. 32"—one begins to tire of this sentence. Fig. 32 gives no interpretation of "F.c.p.," but says "Other abbreviations as in Fig. 31. Fig. 31 leaves "F.c.p." unexplained—"Other abbreviations as in Fig. 30." Fig. 30 does not mention "F.c.p.," but says "Other abbreviations as in Fig. 29." It is not without emotion that one finds no reference at all to "F.c.p." in Fig. 29; and on looking carefully through the whole series of nine diagrams again one finds that "F.c.p." is a misprint for "F.l.p.," and that "F.l.p." is explained in the text beneath Fig. 31. It is only fair to say that the same series of errors occurs in the second German edition of the book, and that Dr. Arnold is doing no more than repeat the mistake made in the first instance by the artist who drew Fig. 37. But it is always irritating to a reader to be referred from one diagram to another in order to find out the meaning of the abbreviations employed in it, and we cannot help thinking that the publishers would do well to make the explanatory text of each figure complete in itself, should the opportunity be afforded by a second English edition.

In his essay on the symptomatology of the cerebral paralyses[9] GUSTAF BERGMARK has devoted special attention to those which are a sequel to lesions of the sensory motor zone of the hemispheres or internal capsule. Professor Petren's observation that certain cerebral disturbances, notably those of cortical origin, may cause paralyses without increasing the reflexes, has been carefully controlled by Bergmark, whose own material and that gathered from the literature on the subject is considerable. He found that cortical lesions affect the reflexes less than lesions of the capsule, and that no correlation can be found between the sensory disturbances on the one hand and the reflexes on the other. With regard to the differential diagnosis of cortical and capsular lesions, he holds that, apart from the condition of the reflexes, there are certain sensory and motor phenomena which are characteristic of cortical lesions and are absent in lesions of the capsule. Many excellent illustrations are given, and the work bears witness to that thoroughness and attention to detail which is so characteristic of Swedish scientific literature.

[8] *Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord*: A Concise Introduction to the Principles of Clinical Localization in Diseases and Injuries of the Central Nervous System. By R. Bing. Translated from the German by F. S. Arnold, B.A., M.B., B.Ch.Oxon. London: Rebman, Limited. 1911. (Med. 8vo, pp. 226; illustrations 70. 10s. 6d. net.)

[9] *Bidrag till: De Cerebrala Förlamningarnas Symptomatologi.* By Gustaf Bergmark. Uppsala: Almqvist, and Wiksells, Boktryckeri. (Roy. 8vo, pp. 210.)

NOTES ON BOOKS.

THE third edition of *A Handbook of Medical Diagnosis*,[10] by Dr. J. C. WILSON, of Jefferson Medical College, like the first, is divided into four parts—medical diagnosis in general, methods and their immediate results, symptoms from signs, clinical application—and is profusely and admirably illustrated by coloured plates and figures in the text. It appears, in short, to be fully equal in all respects to the first edition, which we described as about the best publication of the kind that had yet appeared in the English language. Certain of the sections are entirely new—those, for instance, dealing with Mexican typhus, the electro-cardio-diagraph, and Brill's disease or pseudo-typhus.

A pamphlet of fifty pages, with the title, *Small-pox and Vaccination in British India*,[11] has been issued by the Antivaccination League. It consists partly of letters sent by the editor of the *Vaccination Inquirer* to various Indian newspapers; a reprint of a review of the work entitled *Small-pox and Vaccination in British India*, by Major G. P. James, M.D., the Statistical Officer to the Government of India; some excerpts from the works of Herbert Spencer, and various letters against vaccination. But the very first page of the pamphlet is a refutation of all that follows, for it gives, from a return laid before Parliament and from later statistics, the small-pox deaths, actual and per million of population, in each of the three great provinces, Bengal, Madras, and Bombay, and in India as a whole, from the year 1878 to the year 1909. The average annual small-pox death-rate per million living, which was 1,032 in the decade 1868–77, sank steadily in the three succeeding decades to 772, 466, and 374. This is a remarkable diminution in an immense country without universal compulsory vaccination, for vaccination is compulsory only in those municipalities which apply for this power; and Dr. James has informed us in his book that down to 1906 only 484 out of 719 towns had adopted compulsory vaccination. The Surgeon-General to the Governor of Bombay wrote in 1911: "Vaccination is not compulsory in India, or likely to be." And Mr. Montague, in Parliament last year, stated that vaccination is optional over the greater part of India, "including 93 per cent. of population." The vaccinations are over 9,000,000 yearly, but the vaccinated children under 1 year are only about 4,000,000. We are treated to the usual strong language adopted by many opponents of vaccination. The practice is called a terrible curse, and a letter by Lieutenant-Colonel Collie, I.M.S., to the *Times of India*, in which revaccination is strongly recommended, receives the following comment: "The fiendish spirit of tyranny that pervades this letter is as deplorable as its abysmal stupidity. We do not suppose that this vaccino-maniac has enough brains to understand the question." This is indeed unfortunate.

Both editors and publishers are to be congratulated upon the issue of a sixth edition of *An Index of Treatment by Various Authors*.[12] The great and deserved popularity of the book is proved by the fact that a sixth edition has been called for within five years of publication. The editors have taken advantage of the opportunity to subject the original articles to a thorough revision in order that the teaching may be brought absolutely up to date. In the majority of instances this result has been attained. Several new articles have also been added, the most important dealing with puerperal sepsis, hydrotherapy, phototherapy, and thermotherapy treatment by carbonic acid snow. These articles are lucid and comprehensive, and well sustain the general high standard of excellence to be found throughout the book. A glance at the list of collaborators is sufficient to assure the most sceptical that the information in the volume is thoroughly trustworthy. We know of no work which, within the same compass, contains such a mine of useful information, and none which could better repay the purchaser, especially if he be a busy practitioner. Of neces-

[10] *A Handbook of Medical Diagnosis for the Use of Practitioners and Students.* By J. C. Wilson, A.M., M.D. Third edition, thoroughly revised. Philadelphia and London: J. P. Lippincott. 1911. (Sup. roy. 8vo, pp. 1460. 25s. net.)

[11] *Small-pox and Vaccination in British India.* Published by the National Antivaccination League, London. (6d.)

[12] *An Index of Treatment by Various Authors.* Edited by Robert Hutchison, M.D., F.R.C.P., Physician to the London Hospital, and H. Stansfield Collier, F.R.C.S., Surgeon to St. Mary's Hospital, Joint Lecturer in Surgery in St. Mary's Hospital Medical School. Sixth edition, revised and enlarged. Bristol: John Wright and Sons, Limited. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. New York: William Wood and Co. 1911. (Med. 8vo, pp. 1113; figs. 67. 21s. net.)

sity in a book like this there are many omissions, but it is safe to say that no one who follows the rules of treatment laid down in this book can go far wrong. The continued success of *An Index of Treatment* may be confidently predicted.

During the past few weeks new editions have appeared of several of the booklets belonging to the Students' Aid Series,[13] and the already lengthy list of volumes published under this general title has been increased by one dealing with histology. The author is Dr. ALEXANDER GOODALL, of Edinburgh, who, commencing with a short sketch of development and ending with a detailed description of histological methods, covers all the essential facts regarding the minute structure. The reissues are a fifth edition of *Aids to Ophthalmology* by Mr. Bishop Harman, and second editions of the corresponding books on *Bacteriology* by Messrs. C. J. Moor and W. Partridge, on *Practical Pharmacy* by Dr. A. Campbell Stark, and on *Pathology* by Dr. Harry Campbell. The latter includes an admirable exposition of the subject of immunity, in which the production and action of antibodies is illustrated by the Wassermann reaction; Mr. Bishop Harman's volume, in addition to other matter, provides a very succinct and yet comprehensive account of refraction work. Both these volumes, indeed, are notable for the amount of information the authors manage to afford despite the brief space at their disposal. The original idea of this series, we believe, was that its members should serve as examination cram-books. As they now stand, most of them are much above the class of such works.

Sir GEORGE BEATSON, M.D., K.C.B., Chairman of the Council of the Scottish Branch of the British Red Cross Society, who takes a very grave view of the existing European situation, has in a pamphlet, entitled *The National Danger and the National Duty*,[14] made a very serious appeal to the country. It is, he urges, essential speedily to come to a compromise on the questions of the strength, the training, and the mode of raising the Home Defence Army. The Territorial Force has never attained the establishment of 315,000 officers and men. The shortage at the beginning of 1911 was 50,000; it is calculated that in March next, when the recruits of 1908 have served their time, the Territorial Force will probably lose some 50,000 men, reducing the strength to 180,000, so that, allowing for new recruits to the extent of 25,000, the Territorial Force will still be 110,000 below the strength considered necessary by the military authorities. The scheme promoted by Lord Roberts, with the support of the Universal Service League, for 1,000,000 men has, Sir George Beatson thinks, stood in the way of the realization of the smaller scheme of the Territorial Force. The compromise suggested is on the basis of 500,000 men, raised upon the voluntary system. He does not accept the criticism that this could not be done, for the Territorial Force, he holds, has been the victim of a combination of circumstances unhappy but remediable. He says:

> The County Associations have been deprived of all powers, the promise of ample pecuniary grants made four years ago have not been fulfilled, a parsimonious economy in the administration of the force has been substituted, while the officers and men of the force have had their enthusiasm damped by being furnished with inferior equipment and indirectly told that the present is a period of latent energy, and that the real training will begin when war breaks out. Nothing, in my opinion, has been so fatal to the progress of a force that depends for its success upon enthusiasm than to be told that the present period of service is only preliminary to real work.

He believes that if greater latitude were given to County Associations, and if more liberal pecuniary support were afforded, and if the National Service League were to agree to the compromise, a conference might be able to agree to a proper working programme. Sir George Beatson has worked so well and so disinterestedly during many years to maintain and improve home defences that his warning with its suggestion of a working scheme will not fail to be widely read, and may, it is to be hoped, lead to an early conference.

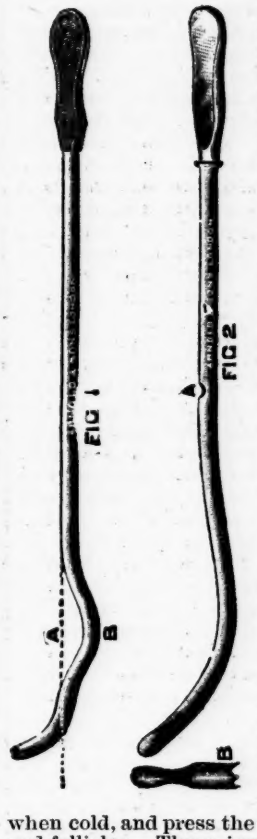
[13] The Students' Aid Series. *Aids to Ophthalmology*. By N. Bishop Harman. Fifth edition. Price, 2s. 6d. net. *Aids to Pathology*. By Harry Campbell. Second edition. Price, 3s. 6d. net. *Aids to Bacteriology*. By Moor and Partridge. Second edition. Price, 3s. 6d. *Aids to Practical Pharmacy*. By A. Campbell Stark. Second edition. Price, 2s. 6d. net. *Aids to Histology*. By A. Goodall. First edition. Price, 2s. 6d. net. London: Baillière, Tindall, and Cox. 1912. (All fcap. 8vo.)

[14] *The National Danger and the National Duty: A Plea for Compromise and Unity*. By Sir George Thomas Beatson, M.D., K.C.B., D.L. Glasgow: James Hedderwick and Sons. (Cr. 8vo, pp. 16, with folding map. Price, 1d.).

MEDICAL AND SURGICAL APPLIANCES.

Urethral Sounds.

WITH reference to the instruments depicted in the annexed engravings, Mr. James MacMunn, of Finsbury Pavement, writes: Fig. 1 is of chief use when the meatus is narrow and when we wish to fully distend the urethra behind for the diagnosis and treatment of pathological narrowings, especially at the bulb, which, of course, is the widest part of the anterior urethra; the roof is straight and resistant, the floor expansile and uneven. Narrowings and infiltrations are mostly seated in the floor. Considering this character of the roof, it is apparent that the sound, Fig. 1, will exercise a distension from A to B. I use three sizes. Fig. 2 is a sound which will really fall into the bladder "by its own weight." It is remarkable how easily these spoon-shaped sounds will pass. The full curved sound, no matter what circle the curve presents, should be given up—for strictures at least. Passing sounds into the bladder for stricture is usually unjustifiable traumatism. Every sound should be marked at A, 7 in. from its tip. It should be 1½ mm. thinner at its beak and shaft than at the convexity of its curve. I find a flat-necked bulbous point to be the best form of wedge. Before passing instruments it is best to inject the lubricant. Sounds have been greatly superseded, because they have not been properly used: they are better than expanding instruments; they are sedative when cold, and press the contents out of veins, lymphatics, and follicles. These instruments have been long used by me, and are now neatly made by Messrs. Arnold and Sons.



THE WEST AFRICAN MEDICAL STAFF.

THE winter dinner of the West African Medical Staff took place on January 19th at the Trocadero Restaurant, when there was a large gathering of the past and present members of the Staff.

Dr. PROUT, C.M.G., of the Liverpool School of Tropical Medicine, late P.M.O., W.A.M.S., presided, and the guest of the evening was the Right Hon. L. Harcourt, Secretary of State for the Colonies. Other guests were Sir Ronald Ross, K.C.B., Messrs. Fiddian, Robinson, and Baynes, of the Colonial Office; Major Armitage, C.M.G., D.S.O., Chief Commissioner, Northern Territories, Gold Coast; and Mr. R. H. Maude, Solicitor-General, Gold Coast.

After the toast of "The King" had been duly honoured, the CHAIRMAN called upon Dr. Langley Hunt, who was leaving the Staff and proceeding to Ceylon. Dr. LANGLEY HUNT said that the members of the Staff had done a great work in West Africa, and it was only those who had come into close contact with the natives who could realize the great influence they had in gaining their confidence.

Dr. PROUT, in proposing the toast of "The Guests," said that they welcomed the Secretary of State, not only as the head of the Colonial Office, but because they recognized in him the actual head of the West African Medical Staff, and that he was the final arbiter to whom all questions connected with their profession on the Coast must in the last resort be referred, and by whom they must be decided. It was a matter for congratulation that they had had at the Colonial Office a succession of statesmen who had fully realized the vital importance of the great questions of medical research and tropical hygiene. He had been associated for over twenty-five years with the tropics, and had seen a great change come over the attitude of the public and of the official mind. Formerly tropical diseases were regarded with

a species of fatalism, but owing to the advances of tropical research it was now realized that diseases in the tropics were as preventable as in temperate climates, and that it was essential for the economic development and future civilization of the colonies that they should first be made healthy. As a member of the Advisory Committee to the Colonial Office he had had many opportunities of becoming personally acquainted with the keen interest which Mr. Harcourt took in these matters, and instanced, as an example, the Nyasaland Commission on Sleeping Sickness, which was largely due to the personal influence of the Secretary of State. He foresaw in the Advisory Committee to the Colonial Office the nucleus of a vast imperial health organization, with its head quarters in the seat of the empire, but with ramifications extending all over the globe, staffed not only by men of eminence in science in this country, but mainly by men who had had a personal knowledge and experience of the problems to be dealt with in the colonies, with departments dealing with different diseases, collecting statistics, collecting information, stimulating research, and in every way promoting the health of that great empire of which we are so proud.

In responding, the Secretary of State for the Colonies said: I esteem it an especial honour to be the guest of the West African Medical Staff, and I am deeply grateful for the terms in which your Chairman has proposed this toast. I wish to assure you of the gratification it is to me to have this rare but welcome opportunity of expressing to you, and through you to all your colleagues, my deep gratitude for, and high appreciation of, the splendid services you are rendering in your exile to the cause of humanity and empire. A Colonial Secretary, whatever his tastes, however deep his ignorance, must, by his daily experience and anxieties, becomes a *médecin malgré lui*. I do not, however, admit myself to be wholly an ignoramus. It has been one of my relaxations in life—I do not say it as commendation to you—to have been in medicine a judicious mixture of the quack, the empiric, and the amateur. You will no doubt, after such a description, wonder why I have not long ago appeared before the coroner. The reason is, that in the last resort my valour has been so subject to my discretion that in anything more serious than a common cold I have generally sought the advice and paid the fee of those who are qualified to give the one and receive the other. Perhaps I may be permitted the harmless gratification of saying in my own justification that I was one of the first, if not the first, now thirty years ago, to experiment with the leaves of *Erythroxylon coca!* (then a little known plant obtained for me from South America by the *Lancet*), and with the tincture I myself made the cocaine, to procure, I believe for the first time, the complete and rather alarming anaesthesia of the throat and eye. If I could have retained an exclusive knowledge of its effect on the vocal cords, how much trouble and suffering I might have saved by its secret administration in my present profession to opponents and colleagues! I said just now that in the Colonial Office one must be, or ought to be, Molière's "involuntary physician." I say this because perhaps the saddest incidents of an anxious day are the telegrams which pour in on me from all quarters of the globe of yellow fever here, plague there, blackwater fever somewhere else, malaria almost everywhere, sleeping sickness in ill-defined and, I fear, extending regions. There is pathos, as one of your colleagues has written in *Lyra Nigeria*, in the

> Thought of the workers of yesterday,
> The men on whose bones we build;

and there is a sardonic truth in his picture of life on the Coast as

> The woof of farce, together bound
> By warp of grimmest Tragedy.

I wish that by my words to you to-night I could bring home to the rest of you who are fighting the great fight in the swamps, the jungle, and the desert that we who live at home in so-called ease, chained to an administrative desk, are not unconscious and not unmindful of the hopes, the fears, the struggles, and the triumphs of the pioneers of tropical medicine. As the area of research broadens while it concentrates, your opportunities for distinction and achievement extend with the painstaking records of receptive and perceptive minds. If a disinfectant could make Colon into a sanatorium there should be no limit to your aspirations. I am comforted and consoled by the thought that there is in your pursuits what is essential to a Briton—an element of sport. Foxes may be scarce and hounds deficient, but you can always pursue the *Stegomyia* of yellow fever to its earth in a jam-pot, or have a drive of mosquitos to be decimated with a syringe. I am not sure that your colleagues in Central Africa may not have to become big game hunters if *Glossina morsitans* is going to affect the vices of its degenerate brother, *palpalis*. But if I talk lightly after dinner of these incidents, do not imagine that I take anything but a serious view of your difficulties, your duties, and your prospects. If it were not for my official position I should tell you that, as a private individual, I consider you to be miserably underpaid, but, departmentally, I avoid any further reference to the stipend you are willing to accept. This at least I will say, that the insufficiency of the material rewards you reap seems to have no discouraging influence on the efficiency of your service. You have some experimental advantages and opportunities of practical research which are denied to your stay-at-home colleagues. You are occupying one of the actual fields on which the battles of new methods is being fought and their results tested. In the domain of pure medicine I suppose that it would be true to say that, apart from synthetic drugs, no true prophylactic has been discovered since Jesuits' bark developed into quinine. But the work on other lines of Pasteur, Koch, Almroth Wright, Sir Ronald Ross, and Boyce—though not commanding by any means universal assent, has opened new avenues of fruitful inquiry and fertile hopes. It may not be what Sir Benjamin Brodie once called "ideal chemistry," but it is full of possibilities which may stir the imagination of the most phlegmatic. It is true that much caution is required lest the latest hypotheses should be too readily accepted as accepted postulates, but nearly all great discoveries have advanced through the experimental adoption of unproved, sometimes unprovable, assumptions. You are, by the locality of your practice, specially interested in the study, the treatment, and the cure of yellow fever. I should share the usual and proper fate of amateurs if I ventured upon the dangerous discussion of the differentiation of yellow fever from bilious remittent as distinguished by black vomit, or if I trenched upon the speculation as to semi-immunity derived from adolescent and unrecognized attacks. I only mention these doubts and discussions because I am sure we all feel that all avenues of possible progress should not be closed by prejudice or prejudgement. Research is not an end; it is only a means. But it is true that it is also one of the pleasures of life to him who knows how to pursue it. The pursuit of truth—everywhere unsuccessful—has given happiness to generations of great scientists; its attainment is the golden crown reserved for the very few. If a time came when all was known—when investigation and experiment were at an end—half the pleasure and profit of life would have died with the knowledge. We may remain happy, then, in the anticipation of the possession of knowledge yet unwon. The questioning of Nature—the causes of disease, the problems of life and death—will last as long as the generations of mankind. In conclusion, I can only apologize to you for the excursions of an ignoramus. They have been made, not as the speculations of a thinker, but to try to show you that in all that concerns your great profession—in the services you render, in the results you attain—you have a true friend and well-wisher in Downing Street.

Sir Ronald Ross also briefly responded, and said that progress in tropical sanitation was now going ahead by leaps and bounds. It generally took about ten years before any new discovery in medicine was accepted, and that had been the case with tropical medicine. It was just over ten years since the method of transmission of malaria was definitely proved, and it was only now that actual progress was being made. He thought that though the Americans had done much in the way of the application of tropical sanitation, England, which was first in the field, still showed the way on tropical research and medicine. He was sure that a new era was dawning for West Africa, and he was confident the West African Medical Staff would do all in their power to forward it.

Dr. FORDE then proposed the health of the Chairman, who suitably responded, after which an adjournment was made to the ante-room, where the Secretary of State had the opportunity of making the personal acquaintance of members of the staff.

MEDICAL EDUCATION IN LONDON AND PROFESSOR VON MÜLLER.

[BY A LONDON TEACHER.]

THE Royal Commission on University Education in London, sitting under the chairmanship of Lord Haldane, in considering the question of medical education in the Medical Schools of London and in the University of London, invited, and obtained, the evidence of Professor Friedrich von Müller, M.D., LL.D., Professor of Clinical Medicine at the University of Munich. The memorandum submitted by Professor von Müller to the Royal Commission was published in the pages of the BRITISH MEDICAL JOURNAL on November 25th, 1911. Although Professor von Müller disclaims any knowledge of medical education in London, and, indeed, expressly states that for that reason he is ill-qualified to give advice upon the subject, we may suspect, not without reason, that a commission over which Lord Haldane's influence is paramount will listen with attention to the suggestion that we shall better our old-time institutions by an adaptation to the German plan. Only those who have had an opportunity of estimating the standard of knowledge and of practical capacity of the younger generation of men trained in the London Schools of Medicine, and of comparing this standard with that achieved in Germany, are in a position to realize what incalculable damage would be done were we to abandon our present methods and replace them by the system in vogue in Germany.

The system of medical education in Germany and in England presents the most complete contrast. In England, although we have abandoned the system of apprenticeship, the training remains eminently practical. In the large London hospitals there are numerous physicians and surgeons, each one of whom is head of his own clinic and wards. As soon as a student has graduated at a university, after studying for three or four years the more purely scientific subjects of chemistry, physics, biology, anatomy, and physiology, or when he has passed, after a similar training at one of the London schools, the corresponding examination of the University of London, or of the Conjoint Board of the Royal Colleges of Physicians and of Surgeons, he is admitted to the wards of the hospital, and is attached in turn, as dresser or as clerk, to different members of the hospital staff, by whom he is instructed daily at the bedside. In addition, he attends clinical lectures and demonstrations.

In Germany, after a similar preliminary scientific training, the student is admitted to a large number of clinical demonstrations conducted by the professor upon specially selected cases in a large lecture hall, and attends lectures upon the theory of medicine and classes upon the methods of medical and surgical practice. Under no circumstances is he admitted into the wards of the hospital to work among the patients. The work of the wards is entirely carried on by the one all-powerful head, the professor, and by his paid subordinates and assistants. In his fourth year the student attends in the out-patient department and is instructed in the examination of patients.

To compensate for a training so deficient in opportunity the Government has recently found it necessary to decree that after qualification all students shall spend a year as resident in a hospital.

Following Professor von Müller, we may compare these two systems under the following heads: (*a*) The effect upon the students; (*b*) the effect upon the patients; (*c*) the effect upon the staff of the hospital and upon medical research.

THE EFFECT UPON THE STUDENTS.

According to Dr. von Müller, it is the boast of university education in Germany, as well in the Medical Faculty as elsewhere, that it is founded upon the principle of absolute freedom of learning. "The student is allowed to go his own way, and nobody cares whether he is present at every lecture or whether he is idle." Dr. Müller admits that such a system has its dangers, and those who have any knowledge of student life in a German university will agree with him heartily. "Many weak and unprincipled characters," he says, "are ruined by the absence of control and neglect their studies." In London this difficulty—and it was once a very great one—has been overcome by the plan of giving to the students real duties to perform, carrying with them a real responsibility. At first, no doubt, the responsibility is of the slightest and the supervision of the strictest; yet as time goes on the responsibility becomes greater and the supervision less, until by imperceptible gradation the student becomes able to deal with the difficulties of practice. To postpone nearly all practical experience until qualification and the assumption of the duties of resident house-physician or house-surgeon, as is the rule in Germany, is not only dangerous to the patients, but it throws a sudden and immense strain upon the nervous constitution of the young medical man.

Any one who possesses an intimate knowledge of the London student will know how great is the sobering and elevating effect of this sense of responsibility. At Oxford and Cambridge or in the dissecting-room of a London hospital, during his chrysalis stage, the medical student is often idle and pleasure-loving—sometimes and on occasion rowdy and childish; but let the same student be set to dress the wounds of a child that has been badly burnt or to help some poor woman in confinement, and he will cheerfully work all day and far into the night as well. When the welfare of a patient depends upon his punctuality and industry, punctuality and industry are almost invariably forthcoming.

Our English system has one other immense advantage—the close personal relation which exists between the physician or surgeon and his handful of clerks or dressers, working together for the benefit of some fifty or sixty patients. Friendships so formed are often lifelong possessions. The teacher is upon his mettle to make as few mistakes as possible before an assemblage of dressers or clerks that is not always merciful in criticism. The students are equally determined to forestall any discovery of their chief and to have all the facts of a case ready for his consideration. In Germany the professor is wont at times facetiously to address his audience of students as *Kollege*, and the jest is always relished. In the London hospitals the relationship might well be so expressed in sober earnest.

Clinical demonstrations given in a large lecture theatre are, of course, not without their uses, and such demonstrations are given at all London hospitals in suitable cases. As the sole method of teaching, the disadvantages are numerous and serious. Such a demonstration is unsuitable in all cases of acute illness, because it may be harmful to the patient. It is quite valueless in those diseases where there is no objective sign which presents itself to the eye, and the majority of cases both in medicine and surgery are included in this category. Of what use to demonstrate a case of gastric ulcer or appendicitis to a vast audience of students, packed bench above bench to the ceiling? How can a student so learn to distinguish by stethoscope the signs of early consumption, much less to make the most difficult of all diagnoses—that the ills complained of are purely imaginary? A system of demonstration in a large lecture theatre is, in truth, only applicable to inanimate objects. For instance, it may well be used in the *post-mortem* room, as is the invariable practice in this country. On the other hand, it is quite unsuitable to display the effects of disease upon that most complex thing, the patient. Medicine, inasmuch as it deals, not with morbid anatomy, but with the effects of disease upon patients of varying personality, age, constitution, and temperament, cannot be learnt except by close association between doctor and patient. The senior student in a London hospital has every opportunity of gaining a true understanding of his patients, and those who know the life in the wards will know how often he gains their respect and affection. Patients may never have taken the trouble to learn the name of the surgeon or physician under whose care they were admitted, but they will often remember after many years the name of their clerk or dresser.

THE EFFECT UPON THE PATIENTS.

If the English system presents all these manifest advantages, it may be asked why it has not been adopted on the Continent.

The divergence between the systems depends partly upon the differences in the circumstances under which the patients enter the hospital, still more upon the character of the students and nurses, and the social class from which they are drawn.

In England there are two scparate systems of treatment of the sick poor. Specially selected cases of acute disease, or of disease which is of a curable nature, are admitted into the great voluntarily supported hospitals. For the remainder, there exists the relief afforded by the Poor Law infirmaries. In Germany there is but one institution, the hospital, towards the maintenance of which every patient must pay a varying sum, usually about 3s. per diem. If the patient is too poor to pay, the State insurance or the Poor Law authorities find the money. If he is well-to-do, he may pay a higher price and obtain better quarters and greater comfort.

The attitude of our own poor to the workhouse infirmary is well known; it is as a rule that of extreme repulsion. The infirmaries are and must be managed with the most rigid economy; cleanliness, decency, and a sufficiency of food may be procured, but there is little time for sympathetic attention or the humouring of the sick. In the hospitals of London the conditions are infinitely better; bright fires, easy chairs, flowers, and especially a sufficiency of nurses of the better class, whose work and pleasure it is to wait upon the sick at every moment of the day, make the patients' stay as pleasant as possible. Hospital patients are, therefore, as a rule anxious for admission, and on discharge grateful for what has been done. They are no more inclined to resent the daily visit of their dresser or clerk, whose ministrations they regard, rightly, as important to their welfare, than they are inclined to resent the services of the nursing staff.

In Germany the attitude of the sick poor to the hospital is more akin to that of our own poor to the infirmary. For the small sum charged only the bare necessities are provided, and the nursing is, to our way of thinking, completely inadequate. The patient, so soon as the severity of his suffering is somewhat mitigated, is left to minister to his own comfort, and no attempt is made to cheer the time of his convalescence. There is no gratitude shown or expected, and little trace of the pleasant relationship which exists in the London hospitals between the patient and those who have made themselves responsible for his comfort—house-officer, Sister, dresser, and nurse.

No doubt, under such circumstances as at present exist in German hospitals, examination of patients by students would be resented. "Most of our patients," says Professor von Müller, "have a *right* to be admitted. . . . This is the reason why our patients are not all willing to be examined by the students or to be made the subjects of demonstration in the theatre." In the London hospitals a refusal on the patients' part to enter heartily into the students' attempt to record the case for the physician is almost unknown. In the surgical wards his work as dresser gives the student a position which is never disputed.

The constant care and attention which the dresser or clerk—who, even if he lacks experience, is yet well trained and educated—bestows upon the case can only be for the good of the patient, and is a valuable addition to the less frequent examination of the house-officer or of the physician or surgeon.

Lastly, the English system is only possible when two conditions are fulfilled. The students must be drawn from a class whose code of honour is high and whose previous training and education has been that of gentlemen. Secondly, the nursing staff must be formed of women of refinement and good breeding. Upon these two conditions depends the whole tone of life in the wards. In only a few of the German hospitals is the second condition fulfilled; as to the first, standards of manners differ so widely in different countries that comparison becomes impossible. Those who have had experience of German doctors will know best of what share of refinement, tact, gentleness, and sympathy they are possessed.

THE EFFECT UPON THE STAFF OF THE HOSPITAL AND UPON MEDICAL RESEARCH.

In Germany the head of the clinic, the professor, receives a salary which is paid him by the university. Professor von Müller says:

> It is not proper that the clinical professor should be burdened with great obligations as a teacher, and at the same time compelled to support himself by private practice. The salary of university professors in Germany is not bad. It amounts for an ordinary professorship to £200 to £500 a year, and permits him to maintain a good social position.

In addition, Professor von Müller goes on to explain, lest in such abundance of wealth a professor should grow lazy, his income is supplemented and his energies stimulated by a small capitation fee for each student. In London, where a successful physician or surgeon may well earn ten times that amount, it would be impossible on such a salary to attract first-rate talent. But even if the best men possible were willing to devote their energies exclusively to hospital practice and hospital teaching, it is certain that such limitation would not be advisable. To lose touch with practice would render any teacher sterile and unattractive within the space of a few years. Moreover, if private practice were forbidden, the provision could scarcely be enforced. The rich and prominent could not be prevented from making use of the services of a physician whose gifts they conceived were pre-eminently suited to their particular case. To attempt to debar a professor of the practice of medicine from the right to practise would be both impossible and unwise. It is necessary to adopt a compromise, and to demand and accept from the hospital physician and surgeon the same assiduous service in the wards that he devotes to his private patients. Assuredly it is against his own interests to neglect his hospital work, inasmuch as the extent of his private practice depends in great measure upon his reputation among the students who pass through his hands.

No doubt in Germany the output of medical literature is greatly in excess of that in England. This is due to the circumstance that in each university there is but one professor who is head of the clinic. The chance of promotion of an assistant to professor in his own school can therefore only be rare. If he is to gain promotion it must usually be by transfer to another school. In such case he is judged for the most part by a consideration of his published works, so that it becomes necessary for all assistants to be frequent contributors to medical literature, to write well if possible, but in any case to write often. Much that is published under this constant stimulus is unnecessary or ephemeral.

Even making allowance for this circumstance, it may perhaps be argued that more research work of value is done in Germany than in this country at the present time. Medical research in England, and especially in London, is hampered for several reasons. The stringent regulations against experiments on animals prevent a certain class of investigation. The high cost of living makes it impossible for men of education to subsist upon research scholarships of a less value than £200 per annum, and even these can, in the nature of things, be attractive only to the younger and unmarried men. Medical research in England is hardly supported at all by the State, and in London, at least, is insufficiently aided by private beneficence.

Were sufficient funds forthcoming there would appear to be no reason why research should not flourish under our present sytem of medical education as actively as it does under that of our German neighbours.

AT the annual meeting of the Liverpool Medical Institution, held on Thursday, January 18th, the following list of office-bearers and members of Council was adopted: President, *Robert Jones; Vice-Presidents, W. B. Paterson, C. S. Sherrington, *C. J. Macalister, and *J. Lloyd Roberts; Treasurer, *R. J. Hamilton; General Secretary, Thomas Bushby; Secretary of Ordinary Meetings, *Alexander Stookes; Secretary of Pathological Meetings, *W. Blair Bell; Librarian, J. C. M. Given; Editor of the Journal, John Hay; Council, Arthur Evans, R. E. Kelly, R. W. MacKenna, J. E. O'Sullivan, C. V. Vereka, O. T. Williams, *T. R. Bradshaw, *T B. Grimsdale, *E. W. Hope, *W. S. Henderson, *N. P. Marsh, and *C. E. Solomon; Auditors, *O. T. Williams and *Henry Harvey. Those marked (*) did not hold the same office last year.

Nova et Vetera.

MODERN FAITH HEALING.

F. ANTON MESMER.

(Continued from page 137.)

THE SECRET REPORT.

THE Commissioners made a secret report to the authorities dealing with the dangers which the practice of magnetism may cause to morals. It was published afterwards by Dubois of Amiens in his *Histoire Académique du Magnétisme Animal*. From that work it was reproduced in full by Morand in his book on animal magnetism.[1] The following is a translation of the text as there given:

The Commissioners entrusted by the King with the inquiry into animal magnetism, when drawing up the report to be presented to His Majesty and made public, thought it prudent to suppress an observation to which publicity should not be given, but they did not think that they ought to conceal it from His Majesty's Minister. That Minister asked them to draw up a report intended to be placed before the eyes of the King and to be reserved for him alone.

This important observation has regard to morals. The Commissioners recognized that the principal causes of the effects attributed to animal magnetism are touching, imagination, imitation, and they observed that there were always many more women than men in a state of crisis. This difference has, as its first cause, the different organizations of the two sexes. Women have in general more excitable nerves; their imagination is more lively, more exalted. It is easy to strike it and bring it into play. This great excitability of the nerves, while giving them more delicate and more exquisite senses, makes them more sensitive to the impression of touch. In touching them in any part whatever one might say that one touches them everywhere at the same time; this great excitability of the nerves makes them more disposed to imitation; women, as has already been pointed out, are like sounding cords fully stretched and in unison. It is enough to put one of these in movement; all the others on the instant share in it; this is what the Commissioners have observed several times; as soon as a woman falls into crisis the others quickly do the same.

This organization makes one understand why women have crises more frequent, longer, more violent than men, and it is to the sensitiveness of their nerves that the greater number of their crises is due. There are some which belong to a hidden but natural cause, to a certain cause of emotions to which women are more or less susceptible, and which by a remote influence accumulating these emotions and carrying them to their highest degree, may contribute to produce a convulsive state which is confused with the other crises; this cause is the empire which Nature has given to one sex over the other to cause attachment and produce emotion; it is always men who magnetize the women; the relations established are doubtless only those of a patient towards his doctor; but this doctor is a man; whatever be the nature of the diseases, it does not deprive us of our sex, it does not remove us entirely from the power of the other; disease may weaken without ever annihilating the impressions. Moreover, most of the women who go to the magnetism are not really ill; many go there through idleness and having nothing to do; others, while having certain infirmities, none the less keep their freshness and their strength; their senses are unimpaired; their youth retains all its sensibility; they have sufficient charm to act upon their doctor; they have health enough to allow the doctor to act on them; then the danger is reciprocal. The proximity long continued, the indispensable touching, the individual heat communicated, their eyes looking into each other's depths, are the known methods of Nature and the means provided by her from all time to bring about infallibly the communication of sensations and affections.

The man who magnetizes has usually the knees of the woman enclosed between his; the knees and consequently all the lower parts of the body are in contact. The hand is applied on the hypochondria and sometimes lower, on the ovaries; the touch is therefore exerted at the same time on an infinity of parts and in the neighbourhood of the most sensitive parts of the body.

Often the man, having his left hand applied thus, passes the right behind the woman's body; the movement of one and the other is to bend mutually in order to favour this double touch. The proximity becomes the greatest possible, face touches face, each draws in the other's breath, all the physical impressions are instantaneously shared, and the reciprocal attraction of the sexes must act with all its force. It is not extraordinary that the senses become enkindled; the imagination which acts at the same time sends a certain disorder throughout the machine; it captures the judgement, puts aside the attentions; the women are not conscious of what they feel; they do not know the state in which they are.

The Commissioners present and attentive to the treatment have noted with care what happens there. When this kind of crisis is about to occur, the face becomes gradually flushed, the eye lights up, and this is the sign by which Nature indicates desire. One sees the woman bend her head, pass her hand over her brow and her eyes to cover them; her habitual modesty is there watching over her without her knowledge and inspires her with the wish to hide herself. Meanwhile the crisis continues, the gaze becomes wild—an unequivocal sign of the total disorder of the senses. This disorder may not be observed by the woman who experiences it, but it has not escaped the observation of the doctors. As soon as this sign is manifest the eyelashes become wet, the breathing is short, gasping; the chest heaves rapidly; convulsions come on with precipitate and brusque movements either of the limbs or of the whole body. In women of keen sensibility the last degree—the term of the sweetest of the emotions—is often a convulsion; to this state succeed languor, depression, a sort of drowsiness of the senses, which is a repose necessary after violent agitation.

The proof that this state of convulsion is not in any way painful and is entirely natural to those who experience it, however extraordinary it may be to those who observe it, is that as soon as it has ceased no troublesome trace thereof remains. The remembrance of it is not disagreeable; women find themselves the better for it, and have no unwillingness to feel it anew. As the emotions experienced are the germs of the affections and the inclinations, one feels why he who magnetizes inspires so much attachment, an attachment which must be more marked in women than in men, as long as the exercise of magnetism is entrusted only to men. Many women have doubtless not felt these effects; others have been ignorant of the cause of the effects which they experienced. The more pure minded they are the less have they been likely to suspect them. We are assured that many have noticed them, and have left the magnetic treatment; but those who are ignorant of them must be preserved from it.

The magnetic treatment cannot be otherwise than dangerous for morals; in proposing to cure diseases which require a long treatment, one excites agreeable and dear emotions, emotions which are regretted, which one seeks to renew because they have a natural charm for us, and because physically they contribute to our happiness; but morally they are none the less to be condemned, and they are all the more dangerous owing to the ease with which the sweet habit of them can be acquired. A state experienced almost in public amidst other women who seem to feel it equally presents nothing alarming; one remains there, one comes back, and one notices the danger only when it is too late. Exposed to this danger, strong-minded women go away; the weaker may lose there their virtue and their health.

M. d'Eslon is not ignorant of this. The lieutenant of police asked him some questions about it in the presence of the Commissioners at a meeting held in M. d'Eslon's own house on May 9th last.[2] M. Le Noir said to him: "In my capacity of lieutenant-general of police, I ask you if when a woman is magnetized and in a state of crisis it would not be easy to take advantage of her."

[1] *Le Magnétisme Animal (Hypnotisme et Suggestion)*. Étude historique et critique. Par le Docteur J. S. Morand, Directeur et rédacteur en chef de la *Gazette médicale de l'Algérie*, Officier de la Légion d'honneur. Ouvrage orné de plusieurs gravures. Pour parler du magnétisme, il faut être médecin. C. Chambard. Paris: Garnier Frères, Libraires-Editeurs, 6, rue des Saints-Pères, 6. 1889.

[2] (?) 1784.

M. d'Eslon replied in the affirmative, and it must in justice to that physician be said that he has always insisted that his brethren, who by their profession are vowed to morality, should alone have the right and the privilege of practising magnetism. It may further be said that although he has in his house a room primarily intended for crises he does not allow use to be made of it; but, notwithstanding this safeguarding of decency, there remains none the less the danger, since the doctor may, if he wishes, take advantage of his patient. Occasions occur every day and at every moment; he is often exposed to it during several hours; who can answer that he will always be able to keep the mastery over his wishes? And even supposing that he possesses a virtue more than human, when he has in his mind emotions which produce desires, the imperious law of Nature will sometimes demand his refusal, and he is answerable for the evil which he has not committed but which he has caused to be committed.

There is, further, a means of exciting convulsions, a means of which the Commissioners have not had direct and positive proofs, but which they have not been able to help suspecting: that is, a pretended crisis which gives the signal or determines a large number of others by imitation. This means is at least necessary in order to hasten and keep up the crises—crises all the more useful to magnetism since without them it could not maintain itself.

There are no real cures; the treatments are very long and unfruitful. There is such a patient who goes to the treatment during eighteen months or two years without any relief; in time one would become weary and tired of going. The crises are a show, they engage attention and interest; moreover, for eyes that pay little attention, they are effects of magnetism, proofs of the existence of that agent, which is really nothing but the power of the imagination.

The Commissioners in commencing their report described only the examination of the magnetism practised by M. d'Eslon because the order of the King, the terms of their reference, sent them only to M. d'Eslon; but it is evident that their observations, their experiments and their opinions refer to magnetism in general. M. Mesmer will not fail to say that the Commissioners have not examined his method, his procedures, or the effects that it produces. The Commissioners doubtless are too prudent to pronounce on what they have not examined, on what they do not know. Nevertheless they feel bound to point out that the principles of M. d'Eslon are the same as those of the twenty-seven propositions printed by M. Mesmer in 1779.[3]

If M. Mesmer propounds a more comprehensive theory, it will only be more absurd on that account; the heavenly influences are an old chimera, the falsehood of which has long been recognized. All that theory may be judged beforehand by this alone—that it has for its basis magnetism, and it cannot have any reality since the animal fluid does not exist. This brilliant theory, like magnetism, exists only in the imagination; M. d'Eslon's method of magnetizing is the same as that of M. Mesmer; M. d'Eslon has been the disciple of M. Mesmer. Again when they have been together both have treated patients indiscriminately, and consequently, in following the same procedures, the method followed by M. d'Eslon to-day can only be that of M. Mesmer.

The effects equally correspond. There are crises as violent, as multiplied, and announced by similar symptoms under the treatment of M. d'Eslon and that of M. Mesmer. What can be M. Mesmer's contention in assigning an unknown and inappreciable difference when the principles, the practice, and the effects are similar? Moreover, if this difference were real, what can be inferred from that in respect of the utility of the treatment as against the means set forth in detail in our report and this note placed under the eyes of His Majesty?

The public voice states that there are no more cures at the hands of M. Mesmer than at those of M. d'Eslon; there is nothing to show that with him, as with M. d'Eslon, the convulsions do not become habitual, and that they do not spread in epidemics in cities, and do not

[3] See BRITISH MEDICAL JOURNAL.

extend to future generations; these practices and these assemblies have equally the same drawbacks in regard to morals.

The experiments of the Commissioners, which show that all these effects are due to touchings, imagination, and imitation, while they explain the effects obtained by M. d'Eslon, likewise explain the effects produced by M. Mesmer. It may, therefore, be reasonably concluded that, whatever be the mystery of the magnetism of M. Mesmer, that magnetism cannot be more real than that of M. d'Eslon, and that the procedures of the one are neither more useful nor less dangerous than those of the other.

(Same signatures as those attached to the public report.) [4]

(To be continued.)

INTERNATIONAL HYGIENE EXHIBITION, DRESDEN, 1911.

REPORT OF THE BRITISH COMMITTEE.

THE following report of the British Committee of the International Hygiene Exhibition has been handed to us for publication:

The great exhibition at Dresden has served two large purposes. It has been the means of placing on record the scientific achievements in the realms of hygiene from the earliest times up to the present, thus assisting the expert in his endeavour to progress. It has also served a vast humanitarian purpose, in instructing millions of lay visitors, with regard to health, the dangers associated with the various modes of life, and the best means of avoiding these dangers. Articles dealing with the value of the exhibition from these and other points of view have appeared in the BRITISH MEDICAL JOURNAL, the *Lancet*, and other journals.

Its International Character.

The exhibition was primarily a German undertaking, but the fact that all the civilized nations were invited to co-operate in carrying out the humanitarian object, rendered it truly international. Among the States officially represented were Austria, Brazil, China, France, Hungary, Italy, Japan and Formosa, Russia, Spain, and Switzerland. It became a necessity, in order that Great Britain should not earn the reputation of an unfriendly nation, that our country should also join hands with Germany in attempting to improve the health conditions of the whole world.

The Governmental Commissions.

Each of the States represented had a special pavilion. The respective Governments appointed a Commission and voted a sum of money for the equipment of the section and for the proper management of the same. The Commissions were placed under the care of a Cihef Commissioner, save in the case of Japan, which had six Commissioners acting conjointly. In each section a staff of assistants and clerks were engaged to carry out the business of the section. Sums varying up to £35,000 were voted for the purpose by the various Governments.

The British Section.

Owing to the refusal of the British Government to undertake to organize the British Section, this duty devolved on the Committee appointed *ad hoc*. The difficulties with which the Committee had to contend were partly due to the smallness of the financial support, partly to the lateness of the beginning, which was occasioned by the difficulty in obtaining funds, and partly by the exclusion of support of Governmental departments. An exception to the last named was found in the case of the Board of Education, which lent a small but valuable exhibit, dealing with the hygiene of schools.

In spite of the necessity of economizing by acquiring a small pavilion, the British Section was by no means the smallest in regard to the number and variety of exhibits. The scheme followed was to illustrate a large number of British methods of dealing with the various hygienic problems. The exhibits were, for the most part, not prepared with a view to elaborate elegant display, but in practically every case scientific excellence was the primary consideration. A catalogue of the Section will be sent on application, enclosing 2d. for postage, to any subscriber or member of the Committee.

The Committee were represented by the Secretary, who conducted the work without the assistance of a staff, thereby effecting a considerable economy. During the period of the exhibition the Committee were continually in receipt of congratulations on the excellence of their work, and the presence of the British Section was obviously appreciated in no small degree, as may be gathered from the fact that it was visited by large crowds of visitors, among whom were the leaders of the various hygienic professions of practically every country. Numbers of experts paid repeated visits to the Section.

The Financial Statement.

The accounts of the Committee have been audited by by Mr. F. W. Osborne, certified accountant. His statement is appended below. As will be seen, the sum of £4,784 14s. 6d. was subscribed by the public for the purpose of equipping the Section. Not allowing for certain receipts in respect of the sale of furniture, etc., the expenditure of the Committee was £4,214 13s. 2d., leaving a balance of £707 3s. 8d. Of this balance, £396 8s. has been returned to the guarantors, who, in response to a request, converted their guarantees into subscriptions, and who have now received back in full the sums thus given. A further balance remains of £310 15s. 8d., of which a certain small sum will be required for the purpose of winding up the business of the Committee.

The Committee suggests that the ultimate balance, which is estimated at £275, should be devoted to a cause which is most closely connected with the object for which the funds were originally given. It appears to the Committee that such an object is the Parkes Museum of the Royal Sanitary Institute. It is therefore proposed by the Committee that the sum available be given to the Royal Sanitary Institute, on the condition that it be used for the improvement of the Parkes Museum. This will be carried into effect if the subscribers consent.

Thanks of the Committee to the Subscribers.

In conclusion, the British Committee of the International Hygiene Exhibition desire to express their best thanks to the generous subscribers who have enabled them to carry out their task to the evident satisfaction of their German hosts and of the visitors to the exhibition.

(Signed) THOMAS BARLOW, Chairman.
ILKESTON, Treasurer.
H. W. ARMIT, Secretary.

STATEMENT OF RECEIPTS AND EXPENDITURE, ETC., TO JANUARY 7TH, 1912.

Receipts.

To subscriptions	£4,784	14	6
To sale of furniture, catalogues, and other amounts	97	14	1
To sundry amounts due	39	8	3
	£4,921	16	10

Expenditure.

By pavilion expenses, including cost of building, electric and water installation, electric fittings, furniture, decorations, lighting, cleaning, attendants' wages, etc.	£1,305	10	3
By management expenses, including salaries, clerical and general expenses, printing, stationery, postages, telegrams, travelling expenses, costs of appeal, and charges incurred in London office	2,151	16	8
By exhibits' account, including show cases, stands, insurance, transport, and packing, etc. ...	757	6	3
	£4,214	13	2
By estimated winding up expenses	35	15	8
By repayment, etc., to guarantors	396	8	0
By balance available	275	0	0
	£4,921	16	10

I hereby certify that the above is a correct statement of the receipts and expenditure incurred in connexion with the British Section of the International Hygiene Exhibition, Dresden, 1911. I have been supplied with all the information that I have required. Vouchers have been produced for all payments made, and I have satisfied myself that all the expenditure has been duly authorized.

FRED. W. OSBORNE,
Certified Accountant (London Association).
16, Sherriff Road, West Hampstead,
January 10th, 1912. London, N.W.

[4] See BRITISH MEDICAL JOURNAL, January 20th, 1912, p. 137.

SCIENCE NOTES.

SIR JOHN MOORE has been induced by a note in this column a fortnight ago on Mr. Sedgwick's study of the weather as recorded by Evelyn and Pepys, to send us a reprint of an article entitled "Is Our Climate Changing?" which he contributed to the *Dublin Journal of Medical Science* in 1908. Sir John Moore's conclusion confirms, or rather anticipated, Mr. Sedgwick's, for he says that the facts he had collected proved that, within the past six centuries at all events, no appreciable change has taken place in the climate of the British Isles, and that there is not the slightest evidence to show that within historic times any such change has taken place in the past or is likely to take place in the future. He is able to go back to the journal of the weather kept in the years 1337 to 1344 by the Rev. William Merle, Fellow of Merton College, Oxford. The existence of the manuscript in the Bodleian Library was brought to light in an interesting way. In 1890 Dr. Hellmann of Berlin found in the fifteenth volume of the *Philosophical Transactions* a letter addressed to Dr. Martin Lister, F.R.S., which mentioned that a copy of Merle's observations existed in the library. Dr. Hellmann put the late Mr. G. J. Symons, F.R.S., on the scent, and Mr. Symons had the manuscript reproduced and translated from the original Latin. Merle's notes show clearly enough that the winter weather in England in the fourteenth century varied in different years very much as it does now, and in quoting some of the entries Sir John says that, from Merle's notes, he "can picture the rapid passage north-eastwards across the Atlantic, outside the western shores of Ireland and Scotland, of a succession of deep atmospheric depressions just like those which are observed in a mild January of the twentieth century." For Dublin Sir John Moore is able to quote records for the seventeenth, eighteenth, and nineteenth centuries. For the seventeenth century he refers to the observations of Dr. Gerard Boate, physician to the Parliamentary forces in Ireland. For the eighteenth he has the results of forty years' observation by Dr. Thomas Rutty, published in 1770 in a volume entitled *A Chronological History of the Weather and Seasons and of the Prevailing Diseases in Dublin.* For the earlier part of the nineteenth century he relies upon the manuscript records of Dr. Thomas H. Orpen, who kept observations on the weather in Dublin from 1805 to 1841, and upon the diary of the weather made by John Underwood, Superintendent of the Botanic Garden. From 1853 onwards he has observations made at Bray by Mr. Richard Barrington, and from 1861 to the present day his own observations. Some of Dr. Rutty's notes would apply fairly well to recent years. For instance, 1736: "This summer was as remarkable for heat as the preceding one had been for coldness and moisture"; again, 1739–1740, "Spring mostly cold. Summer very wet. Autumn variable. Winter frosty, after a long series of open winters." The April of 1740 seems to have been very like the April of 1908, and so on. Mr. W. C. Nash, in a paper on the monthly rainfall at the Royal Observatory, Greenwich, for eighty-nine years, 1815 to 1903, showed that for so variable an element as rainfall a consistent average could scarcely be produced, even with fifty or sixty years' observations. A run of eight consecutive wet years, 1875 to 1882, gave a mean for the period of 27.53 in. a year, while a run of eight consecutive dry years, 1895 to 1902, gave an annual mean of 20.92 in., yet the heaviest rainfall for the whole period of eighty-nine years occurred in 1903, when the measurement was 35.54 in. Sir John Moore quotes, apparently with approval, the conclusion drawn by Dr. Buchan from a study of the temperature of London for 130 years, 1763 to 1892, that no evidence of a recurring cycle can be detected, with the single doubtful example of mean annual temperature, and Sir John Moore's conclusion is that "weather—'*varium et mutabile semper*' as it is—resembles the river which, in the words of Horace, '*Labitur, et labetur in omne volubilis aevum.*'"

An interesting exhibition of nesting-boxes for wild birds was held last week, under the auspices of the Brent Valley and Richmond Branch of the Selborne Society, at the offices of the society in Bloomsbury Square. These boxes, which will be on view from January 31st, are precisely similar to those used with such excellent results in the Brent Valley Bird Sanctuary; and, besides being skilfully adapted to suit the needs of different kinds of British birds, are further contrived so as to render their feathered occupants safe from the depredations of cats and other enemies. The good work done by the Selborne Society in promoting the study of natural history and protecting the native flora and fauna is well known throughout the British Isles, and bird lovers would do well to study the methods employed so successfully by certain of its members in their efforts to prevent the dying-out or migration of native birds near our great cities.

UNITED KINGDOM POLICE SURGEONS' ASSOCIATION.

THE annual meeting of the association was held at 429, Strand, London, W.C., on January 17th.

Report of Council.

The council in presenting the eighteenth annual report expressed its high appreciation of the *esprit de corps* now being shown by the members of the association, in common with the general body of the profession, in strenuously endeavouring to protect the interests of the faculty, and maintain that high standard of medical service which is essential for the proper discharge of its important duties for the State, and the responsibilities which each one undertakes as police surgeon. The council intended to continue its endeavours to obtain from the State in the future that recognition for police surgeons which is so necessary in the public interest. The council expressed its regret that there still existed in the medical schools a need for improvement in the teaching and study of legal medicine, and the hope that the State would make better provision for its skilled medico-legal experts, by giving them every opportunity of obtaining material for their work, so that they might be stimulated to specialize and pay greater attention to the study of the subject. The council was strongly of opinion that the police surgeon should be called in at once on behalf of the police in every suitable criminal case, and if a local practitioner was in attendance, work in conjunction with him, as was already the practice in the metropolitan district. Another matter requiring serious consideration was the proposed co-operation with other societies (Medical Officers of Health, Metropolitan Police Surgeons, Poor Law, Postal, Factory, School Medical Officers, and Public Vaccinators). Federal relationship and a joint committee were suggested, for, if the various bodies referred to were brought into close touch with each other, valuable reciprocal support might on occasion be organized, and co-operation might result in financial and even journalistic economy. It was, at any rate, believed that, speaking in general terms, the aims and objects of these various organizations were not dissimilar, and certainly not opposed to each other. It was therefore open to members to discuss and decide whether or not this important step should be taken, and if so, to instruct the council to proceed with the matter without delay.

Elections.

Professor J. T. J. Morrison (Birmingham) was elected President; and Dr. C. E. Hoar (Maidstone) was added to the Council.

Joint Committee.

It was decided to send delegates to the Joint Committee of Medical Officers of Health Association in order to co-operate with them, and Mr. Morrison, F.R.C.S., Mr. Nelson Hardy, F.R.C.S., and Dr. W. H. Whitehouse were appointed.

The Honorary Secretaries of the Association are: Hugh Powell, M.B., Cheltenham, and W. H. Whitehouse, M.D., D.P.H., Cranmer House, 103, Manor Road, Brockley, London, S.E.

DR. WILLIAM P. GORGAS, Colonel in the United States army, whose name is so deservedly famous in connexion with the sanitation of the Canal zone in Panama, has been elected President of the ninth Congress of American Physicians and Surgeons, which is to meet at Washington in 1913.

LITERARY NOTES.

WE have received the first number of the *Journal of the London School of Tropical Medicine*, the proposed foundation of which was announced in the JOURNAL of October 21st, 1911, p. 1025. The new periodical is issued by the Council of the London School of Tropical Medicine. Sir Patrick Manson is Editor in Chief; Dr. C. W. Daniels, General Editor. According to the prospectus, the *Journal* will be largely composed of original papers, but it is also proposed to include summaries of selected papers not readily accessible in the tropics. It is believed that by this arrangement past students and other practitioners will be enabled to keep abreast with the steady progress that is being made in tropical medicine. The arrangement of the *Journal* in sections, each under a special section editor, will render the contributions and extracts referred to authoritative. Colonel A. Alcock, Professor Tanner Hewlett, Dr. Leiper, Dr. H. B. Newham, and Dr. C. E. Wenyon are Sectional Editors. The number before us contains a Foreword by Sir Patrick Manson. To all interested in the work of the school and in the study of tropical disease generally the new journal will be a mine of carefully selected information. Intending subscribers should apply to Dr. Newham, Director, London School of Tropical Medicine, Albert Dock, E.

Mention has already been made of the new *Journal of Vaccine Therapy*. The first number, which has been issued this month, contains papers on the pathogenesis and treatment of rheumatic fever and chorea, by Dr. R. J. M. Buchanan; on the vaccine treatment of typhoid fever, by Dr. F. J. Sadler; and on the causation and treatment of acne, by the Editor, Dr. R. W. Allen.

It is announced that on January 30th and following day Messrs. Sotheby, Wilkinson, and Hodge will sell the remaining portion of the library of the late Dr. J. Frank Payne. The medical portion of the library was sold in July last for £2,300, but no intimation, as far as we know, has been made as to its ultimate destination. The portion now to be sold is chiefly noteworthy on account of its extensive collection of rare herbals and other natural history books, which will be first offered in one lot. On turning over the catalogue we note *Saxon Leechdoms*, edited by Mr. O. Cockayne; *The Discovery of Witchcraft*, by Reginald Scot (1665). A special feature of the collection is an extensive series of first and other editions of John Milton's writings and Miltoniana. In this series are many rare tracts. Probably the rarest volume of all is *The Ready and Easie Way to Establish a Free Commonwealth*, etc. (1660); "The author, J. M." This copy of the first edition is said to be probably unique.

Dr. Henry Hick returns to the charge in defence of the pronunciation enēma, which was discussed in this column in the JOURNAL of January 6th:

> Your memory is short. Some two years ago you wrote that as "Enema" was a pure Greek word we were wrong who used the long second *e*.
>
> My argument is that as it is now an English word, the Greek pronunciation has nothing to do with the matter, any more than the derivation has in the matter of plurals.
>
> And "Bailey," in his dictionary, of the date of 1775, uses the long *e*. You said, you failed to understand why the word should be like a red rag to a bull; I reply, because it is one of many vulgarisms which appeared together.
>
> I do not object to a nurse, but to her being certific*a*ted.
>
> Any way, I can get over the difficulty of the long *e* by calling a clyster "an objection," as one of my patients does.

Our memory is considerably longer than that of Dr. Hick appears to be. The question has several times been discussed in the JOURNAL during the last seventeen or eighteen years. If our correspondent will look at the issue of November 28th, 1896, p. 1619, he will find that we quoted all the authorities available at the time, including Bailey. We thought we had made it clear that any one can say enēma if he chooses to do so without incurring any penalty. We have ourselves repeatedly pointed out that etymology is not the law of English pronunciation. A story is told of a young curate whose classical susceptibilities were outraged by the customary pronunciation "Alexandria." In his difficulty he sought counsel of Dr. Samuel Parr. The great scholar's reply may serve as a guide to young doctors whose orthoëpic conscience is vexed by a false quantity which has become established in common speech. "Young man," he answered, "*I* may say Alexandrīa; *you* I advise to say Alexandria like everbody else." We notice, by the way, that, contrary to this sound advice, the pronunciation neurasthenīa is coming into fashion among the younger generation of doctors. How vain is the attempt to preserve the classical quantity in English is amusingly illustrated by the well-known story of a distinguished Scottish advocate who, in pleading before the House of Lords, repeatedly spoke of a curator. This at last got upon the nerves of Lord Denman, who was a first-rate scholar, and he mildly called the advocate's attention to his prosodical *faux pas*. The unhesitating reply contains in it the whole philosophy of pronunciation. "Certainly, my Lord," said the Scot; "in the presence of so many illustrious senators and distinguished orators, I have no difficulty in complying with your suggestion about curators." About "enema" we may be allowed to repeat a good story related by Mr. J. M. Cotterill, of Edinburgh, in our pages. A friend of his, he said, was attending a distinguished scholar and cleric of the Modern Athens. Amongst other things the patient was advised to take an enēma. "But, doctor," said the scholar, whose classical ear was offended by the pronunciation, "what about the quantity—the *quantity*, you know?" "Oh, the quantity," said the surgeon; "well, about two pints or so"! While admitting, as we have always done, that one may say enēma if it pleases him, we are puzzled by Dr. Hick's statement that enema is a vulgarism. Why? His objection to the certificated nurse is, like what the soldier said, not evidence as bearing on this point. Apart from etymology that pronunciation is in accordance with the tendency of our language to throw the accent as far back as is possible consistently with ease of articulation. When this tendency happens to be in accordance with etymology, there does not seem to be any valid reason why this harmonious relation should be disturbed. But etymology does not compel us to say curative, sedative, provocative, and so forth.

On the question of "vulgarism" it may be interesting to recall that in the reign of Louis XIV, when the enema syringe was so much the emblem of the medical art that physicians might have associated with it as a motto, *In hoc signo vinces*, a debate arose as to whether the word *lavement* could be used with propriety in ordinary conversation. The Jesuits characteristically solved the difficulty by suggesting the euphemism *remède*. The original word was for a time a vulgarism, but has long since reconquered its position.

With regard to plurals and pronunciation, we have received the following interesting letter from Dr. William L. Storey, of Belfast:

> Your article "Pedantry in Plurals" in the JOURNAL of December 30th, 1911, and the Literary Notes in the JOURNAL of January 6th, proved very instructive reading. I fear, however, that you are too lenient and do not hold the rod of correction in a sufficiently menacing or authoritative manner! No writ will, of course, be served on us if we mispronounce or even misspell, while, so far as our calligraphy is concerned, the jury of laymen has found it undecipherable and the accused incorrigible. Some time ago in commenting on a quotation from John Foster in *Harper's Monthly*, June, 1905, you remarked, "In language whatever is—on the lips of good speakers—is right." Any free-lance can ask, "Who shall decide—who a good speaker is—when doctors disagree?" And the *Spectator*, about five years ago, writing under "The Pronunciation of Latin," said "It is difficult to regard the whole movement either towards or away from reform as a matter of supreme importance." Perhaps this is all right in these days of the reign of the democracy, when the working men, and, more recently, the medical men, are getting more or less out of hand; but when a cultured layman asks me why a large number of us pronounce gynaecology with a hard "g," and the first syllable in "purulent" as if it were the sound emitted by an amiable cat—what am I to say? And, in pity, he suggests the purchase of the *New English Dictionary* (Oxford)!
>
> We should certainly "beware the entrance" of a new pronunciation, but, "being in," must we willy-nilly "bear 't"?
>
> I read an American novel this week. Yes! My eye was naturally, and nationally, offended by such spellings as *traveler*, *center*, *marvelous*, *alright*, etc.; but what almost charred my gorge with throttled oaths (as W. E. Henley would say) was the constant use of *like* for *as* or *as if*—for example, "I used to feel like you do," "just like it was before," "it looks like you were going." Unfortunately this Americanism has reached these shores; it has appeared in English newspapers, and, *horresco referens*, I have heard it on the lips of a university man! Surely you will mark a writ against the Britisher who in future purloins his American neighbour's property!

We fear that a good deal of this pirated property has "come to stay," if we may use what we believe to be another Americanism. It would be useless to mark a writ against the invasion of words and phrases, which, after all, are in the nature of lost property returned.

British Medical Journal.

SATURDAY, JANUARY 27th, 1912.

THE ACT OF CHOICE.

THE dominant science of to-day, in so far as medical progress is concerned, is undoubtedly bacteriology; that of to-morrow, if all the signs of the times may be trusted, will as assuredly be psychology. Psychology is proving not less amenable to inductive and experimental methods of research than its as yet more advanced because less complex and difficult predecessors; but there is one branch of it—that which concerns the process of volition, the psychology of the will as distinguished from that of thought and perception — which, until quite recently at any rate, has been left out in the cold. Mediaeval thinkers regarded the will as an immaterial entity, separate from and independent of the body; needless to say, the modern tendency has been in quite the contrary direction.

The scholastic psychologists, neglecting analysis of the immediate data of consciousness, set out with metaphysical definitions of the nature of will, and from these deduced all concrete volitional acts as logical consequences. The modern attitude towards the problem is, on the contrary, typified by Wundt's assertion that in investigation of the will we must limit ourselves to observing such processes as can be easily influenced by external means—namely, "such as begin with external stimulations and end with external acts." Wundt regarded the will as in essence emotional, the culmination of an emotional process in feelings of resolution and decision, and denied that a volition can ever arise from purely intellectual considerations. From the intimate association of the phenomena of attention and of will he was led to identify apperception with volition. Oswald Külpe follows Wundt in considering apperception and will as one and the same function.

Closely allied to this view is the ideo-motor theory of William James, according to which the mere presence in the mind of the idea of an act tends to bring the act about. "The essential achievement of the will, when it is most voluntary, is," he says, "to attend to a difficult object and hold it fast before the mind." Ribot, on the other hand, regards the subjective phenomena of volition as mere by-products of those unconscious or subconscious psycho-physiological processes by which our actions are in fact determined. For Bain "the motives to voluntary action are unquestionably summed up in pleasure and pain." Mr. Stout follows Wundt in emphasizing the intimate relation of will and attention. With Ribot and Höffding, he attaches little weight to the recognized reasons for a choice or decision. "Behind them there always lies *the self as a whole*, and what this involves can never be completely analysed or stated." Among the first to come to close quarters with the problems of will-psychology by the planning of experiments involving definite acts of choice may be mentioned Donders, Ach, and Prüm.

Dr. E. Boyd Barrett, S.J., in a recently published volume,[1] has described an interesting series of experiments conducted by himself in the psychological laboratory of the Superior Institute of Philosophy at Louvain, which is in the charge of Professor Michotte. In these experiments, which are well worthy of the attention of medical psychologists, the writer "has taken up directly the investigation of motives and motivation, and has examined the problems of the strengthening of motives, the measurement of motive force, and the evolution of motivation." He rightly considers it indispensable "that will psychologists should prepare and plan out in their laboratories precise sets of choices to be made by subjects well trained in psychology and accustomed to introspection. In this manner records of choices of sufficient number and of good quality can be obtained." The subjects of Dr. Barrett's experiments—Professor Michotte, Dr. Fransen, Mr. J. Vance, B.A., and Dr. A. Centner—were all psychological experts. To these four subjects twenty-eight definite choices were presented under identical conditions in a carefully planned order, time durations being marked by chronoscope, and the precautions prescribed by the best exponents of the psychical method observed. Eight colourless liquids of definite strength and indistinguishable appearance were prepared, carefully graduated from the point of view of agreeableness. The chief constituents of the eight liquids were, respectively, sulphuric acid, sodium carbonate, ethyl alcohol, saccharose, sodium salicylate, sodium chloride, essence of anise, essence of orange peel. To each of these a "nonsense" name was given by the initial letters of which, B, C, J, K, L, V, Z, T, they soon came to be known. The four subjects were first systematically trained in tasting and recognizing the eight mixtures, and when they were all fairly proficient in this the reaction times of the associations formed were tested by a series of experiments. When the reaction times grew regular the introductory series was brought to a close, and each subject then wrote down from memory the eight tastes in their order of hedonic value for him.

The choice-experiments proper were now begun. The names of the mixtures were printed on cards in their twenty-eight combinations of two alternatives, and the sittings were so arranged that in each week of the experimental period the entire series of twenty-eight alternatives was presented to each subject, but in a different order for each week. The subject sat at a small table, in a room from which all distracting conditions were excluded, with a finger resting on the reaction key. On a stand before him were placed two glasses containing two of the mixtures; the raising of either glass broke the contact of a circuit connected with a Vernier chronoscope. Above the stand an Ach's card-changer was so placed that on the appearance of the cards the printed names or initials (for example, Z—B) would be seen above the corresponding glasses. The experimenter, from an adjacent room, by pressing a button warned the subject; then by pressing another button caused the card to appear. On seeing the card, the subject read it, weighed the merits of the proposed alternatives, reacted by raising the finger, and took up and drank the chosen mixture. The experimenter then re-entered and wrote down from dictation all that had passed in the subject's mind during the act of choice. These introspections

[1] *Motive Force and Motivation Tracks: A Research in Will Psychology.* By E. Boyd Barrett, S.J., Doctor of Philosophy, Superior Institute, Louvain. London: Longmans, Green, and Co. 1911.

were the material to be analysed later on. The time of choice (from appearance of card to raising of finger) and the time thence to realization (raising of glass) were measured by a Hipp and a Vernier chronoscope. The entire investigation comprised 1,063 experiments.

The author claims for this method that it has enabled him to trace the building up of motives in real acts of choice, to watch the evolution of motivation under various influences, and to analyse and compare the different types of motivation and choice.

A noteworthy feature in all acts of choice is the tendency to economize effort. Thus, where a conflict of motives exists, it is obvious that any given motive may be strengthened or weakened by various conditions; and if a particular motive be so reinforced as to reach a certain degree of strength, called by the author its critical point, the choice ensues automatically without regard to the presence of other and conflicting motives. A similar economy of effort is evidenced in cases where the mind is repeatedly confronted by identical or like alternatives; there is a notable tendency to the repetition of the original mental phenomena, "as though the mind followed in the furrow already ploughed." To these mental furrows or habits of choice the author applies the figurative title of "motivation tracks," and in the study of their development some interesting facts came to light. While the general structure of the choice-act remains much the same, it is performed more rapidly, with less consciousness of effort, less consciousness of any kind. Superfluous factors are dropped; the choice-process is reduced to its simplest terms, and, in place of being jerky or discontinuous, "passes by like a streak or flash of light." On condition that the original choice between two alternatives was based on a thorough motivation and a definite scale of values, there is, in fact, with every repetition an approximation to automatic choice. The feeling-tone of the process becomes pleasanter owing to the removal of doubt and hesitancy. Individual motives—for example, taste-memories and associations—are less vividly or sensuously realized; the subject feels more detached in his deliberation, which becomes with each repetition less concrete and more abstract. Finally, the stage of almost complete automatism is reached; individual motives, first reduced to "a kind of abstract algebra," finally disappear; the entire process is fused into a single impulsive act, and the choice may be made and realized almost before the subject is aware what he has done. Yet it should be noted that several instances of caprice and inconsistency showed the impossibility of arriving at absolute automatism when dealing with human beings. Inconsistency is particularly liable to occur in the case of choice-acts characterized by hesitation. The latter is to be regarded as an anti-economic and injurious affection of the will, distressing to the subject, and attributable generally to careless motivation and the lack of a definite scale of values. It occurs oftenest when choice has to be made between two alternatives of negative value. The central fact that emerges from the investigation as a whole is that "when a choice has to be made between two alternatives, the choice is quick and easy in proportion as the values of the alternatives are clearly and definitely known." The author claims that all the essential elements of character are expressed in the choice-process, and, for one of his four subjects, he even submits a quantitative statement of the various characteristics revealed by his reactions.

SOME TOXIC EFFECTS OF SALVARSAN.

BEFORE the fifth German Congress of Neurologists, held last October in Frankfort, Professor Finger of Vienna delivered, apparently in the presence of Professor Ehrlich himself, an important address on the toxic effects of salvarsan. In his introductory remarks the Viennese syphilographer mentioned incidentally that as long as the preparation was not on the market he had not countenanced its use outside the hospital clinics, for he considered that its employment in private cases in these circumstances was unfair. After it had been placed on the market some unpleasant experiences had made Professor Finger hold his hand before advising its general use.

He considered that the only data from which conclusions should be drawn were those obtained by observation in a hospital, in a public way, where cases could be seen and followed up by several medical men, for it was easy in private practice for the sole observer to auto-suggestionize himself. Dr. Finger had treated over 500 patients with salvarsan, and with salvarsan only, in order to be able to judge the preparation on its merits, an end which could not be achieved if mercury and potassium iodide were also given. Everyone admitted the good symptomatic results obtained by means of salvarsan, but he desired to deal with the complications, especially those of the nervous system.

Latterly, following the lines laid down by Ehrlich, he had used salvarsan by the intravenous method only. Among the symptoms which might follow the injection, Professor Finger enumerated the following: rigors, fever with a temperature of 40° C. (104° F.) and upwards, general malaise, prostration, headache, dizziness, vomiting, colic and diarrhoea, jaundice, loss of appetite, rapid pulse, cardiac symptoms, dryness and irritation of the throat and pharynx, difficulty of breathing, psychic and motor restlessness, tremors of the knees, bladder troubles, severe sweating, conjunctivitis, salivation with salty taste in the mouth, urticaria, erythema, herpes zoster, temporary melanosis. In addition soon after, indeed in some cases immediately after the injection, symptoms such as the following were observed: oedema and cyanosis of the face, clouding of the mind, vomiting, diarrhoea, breathlessness, diaphragmatic cramps, tonic and clonic contractions of the muscles of the limbs, severe collapse. He considered that these various symptoms pointed to an acute arsenical intoxication, and most observers were of the same opinion. He did not agree with the views of Neisser and Kuznitzky on this point, namely, that the symptoms were the result of the direct action of salvarsan on the spirochaetes, that is, were due to a general specific reaction produced by the setting free of endotoxins through the destruction of a large number of the parasites. That view could not explain the fact that similar symptoms had been observed after the injection of salvarsan in non-syphiltics, as in psoriasis and leprosy for instance. Moreover, the *post-mortem* appearances agreed with the diagnosis of arsenical intoxication. Géronne and many others had established this point, and Professor Finger had himself had a fatal case in which the necropsy was done by Professor Weichselbaum of Vienna, who had come to the conclusion in his report that in the absence of any other discoverable cause death was due to acute arsenical intoxication. Nor did Finger accept the view of Wechselmann of Berlin, that the symptoms were due to micro-organisms in the saline solution employed. Finger said that the saline solution he employed was always freshly prepared and sterilized by the hospital pharmacist, and he had, moreover, ascertained

that even before sterilization the saline solution had been found to be practically free from germs. Although both in his own clinic and in that of others in the Vienna General Hospital, intravenous injections of saline solution to the extent of a litre had frequently been carried out for various conditions, symptoms similar to those he had described had never been observed. Moreover, the same symptoms had occurred after intramuscular injections of salvarsan, so that the saline solution could have played no part in their production.

As to the very important matter of nerve involvement, Finger stated that out of his 500 cases nerve complications were observed 44 times (9 per cent.), whereas in Herxheimer's 900 only 9 occurred (1 per cent.), in Weintraud's 1,500 only 13 (0.9 per cent.) and in Wechselmann's 2,800 only 10 (0.37 per cent.). But Zimmern has pointed out that only 125 of Herxheimer's 900 cases were kept under observation, and it was in these 125 cases that 9 instances of nerve trouble (7.5 per cent.) occurred. Géronne and Gutmann had stated that only 300 of Weintraud's 1,500 cases were under any continued observation, and out of these 300 cases 13 exhibited nerve symptoms (4.3 per cent.). Wechselmann himself admitted that he only saw a portion of his total patients again.* Finger then reviewed in detail the cases of nerve complication he had observed, and concluded that the connexion with salvarsan could not, on the following grounds, be doubted:

1. The occurrence of the nerve troubles with typical regularity some six to eight weeks after the salvarsan treatment.

2. The frequency of these complications in patients treated with salvarsan as compared with the relative infrequency of such complications in patients either not treated at all or treated by means of mercury; in the thousands of cases of syphilis he has had under observation for two or three years after infection such nerve complications had been very rare. But in cases treated by salvarsan he had seen in a short period 44 cases of nerve complications in 500 cases treated by salvarsan. Benario had collected in medical literature 194 cases of nerve complication after salvarsan treatment, and 122 after mercurial treatment, but such statistics were of no value unless the total number of cases treated by the two methods was known, and though the total number of salvarsan cases might be known, the number of cases treated by mercury was not known.

Finger criticized Ehrlich's view that the nerve complications were due to the survival of spirochaetes in bony canals, the spirochaetes in the rest of the organism having been destroyed by the salvarsan. There was, he said, no proof of the complete sterilization of the rest of the organism; on the contrary, Finger found that in 12 out of his 44 cases of nerve trouble, widespread affection of the skin and mucous membranes was present at the time of the appearance of the nerve symptoms, or followed the latter. The Viennese professor adduced other objections to salvarsan, and concluded his paper by stating that, judging from his own statistics, the secondary stage, and especially the early secondary stage, was not a suitable period for the exhibition of salvarsan, 12 per cent. of his nerve complication cases occurring in the secondary stage, as against 4 per cent. in the primary and 2 per cent. in the tertiary stages.

On the other hand, whilst admitting that the increased number of complications observed recently after the use of salvarsan, as far as the auditory apparatus is concerned, do mean something new, Dr. Karl Beck, assistant in the ear, throat, and nose clinic of Professor Kümmel in Heidelberg,† points out that as to whether these are due to salvarsan or to syphilis is another matter. In any case he found that, whereas only one such instance of auditory complication has been observed during a period of five years in the ear clinic, five such cases had come under notice in the previous six months after salvarsan treatment. Dr. Beck thought he could clear up the matter by injecting salvarsan in suitable doses into the vein of the tail of white mice, and then, after a time, decapitating the animals and cutting sections of embedded skull and contents. The results were negative. Dr. Beck admits, too, that such experiments on animals cannot afford conclusive evidence as to what happens in the human organism. There are differences which cannot be ignored. The fact remains that auditory complications in the Heidelberg clinic are out and away far more common since salvarsan has been used. This, at any rate, confirms the opinion expressed by Professor Finger of Vienna.

* Whether some of the patients who were injected in the first rush had syphilis at all is a point worth considering.

† *Muench. med. Woch.*, January 9th, 1912, p. 10.

DEATH OF SIR HENRY BUTLIN.

WITH profound regret we have to record the death, at the age of 66, at his house in London, on January 24th, of Sir Henry Butlin, Past-President of the British Medical Association, and of the Royal College of Surgeons of England. He had been in declining health for a year or more, and his recent resignation of the office of President of the Royal College of Surgeons was due to a feeling of failing physical strength, of which his friends were painfully aware, although they detected no diminution in the critical acumen and even balance of judgement which were his most striking intellectual characteristics. It was characteristic of him, also, that in all his prolonged public work for the profession which he loved, and of which he was so bright an ornament, he never grudged, at whatever cost of leisure or private advantage, to give time and energy unstintingly, and that having once undertaken a duty he was never satisfied until he had made himself thoroughly master of every detail and had thoroughly weighed every fact and circumstance which could influence or determine his final decision. He always took a keen interest in the fortunes of the British Medical Association. He was Treasurer from 1891 to 1895, and President in 1910. A biographical notice will be published next week. A memorial service will be held at St. Andrew's, Well Street, at 1.30 p.m. on Monday, January 29th.

THE PROFESSION AND THE POLITICIANS.

MR. J. M. ROBERTSON, M.P., Parliamentary Secretary to the Board of Trade, recently paid the medical profession a very high compliment when he described them as "the worst set of politicians." That he did not mean this as a compliment, but the reverse, makes the offence all the more gracious, for it leaves no room for doubt as to its sincerity. To appreciate the full significance of the compliment one must know the full import of the word "politician." Lord Salisbury, who must be supposed to have known what he was talking about, described politics as a vile trade. We therefore thank Mr. Robertson for saying that we are not skilled in the arts of intrigue, the "terminological inexactitudes," the "ways that are dark and the tricks that are vain," which go to the making of a successful politician in these days. But when Mr. Robertson goes on to say that the majority of doctors are probably Tariff Reformers, and that this is the reason why they have "set up all that violent and furious opposition to the Act," we venture to ask what grounds he has for such an assertion?

He is good enough to suggest as an excuse for our bad politics the fact that the laborious training needed for the medical profession leaves us no time to learn anything else. Well, that training has taught us not to make sweeping assertions without proof, and that is a lesson which Mr. Robertson has evidently not learnt. When he says that if the Insurance Act had been "a proposal to make the people's food and boots dearer, there would have been no meeting of doctors to protest," he makes a statement as silly as it is unwarrantable. Would not the doctors' own food and boots be dearer? And would not the people have less money to pay their doctors? The truth is, we are bad politicians, in Mr. Robertson's opinion, because we fail to appreciate the merits of a measure which as it stands, while doing little good to the people for whose benefit it is ostensibly intended, will do the medical profession much harm. Mr. Robertson has evidently learnt arithmetic at the feet of the Gamaliel of the Treasury, for he assured his Tyneside constituents that "about six millions sterling would be available for the payment of doctors, and, as 10,000 would be sufficient under the Act, that worked out at £600 per doctor per annum." This is indeed a promise of "rare and refreshing fruit" for the parched lips of the profession! But alas! it turns to ashes in our mouths when we are confronted with the hard fact to which Dr. James Muirhead, of North Shields, calls attention, that as there are to be, roughly, fifteen million persons insured, the number of persons named at 6s. a head allows a sum of four and a half million pounds sterling—this sum to pay both doctor and chemist. Where is the doctor to get his £600 a year from? We may also ask, where does Mr. Robertson imagine Mr. Lloyd George is to get the ten thousand doctors from? When the Messenger announces to Macbeth "There is ten thousand ——," the harassed despot asks, "Geese, villain?" Mr. Robertson would answer "*Doctors*, sir." He must know that there is nothing like that number available if they stand firm and faithful to their pledges. The profession will insist on express and unreserved compliance with its just demands, and will decline to be cooked with any sauce offered by politicians who seek to buy popularity at its expense.

THE "CARNEGIE UNIVERSITY."

AMERICA is the land of many inventions. Among them is the quack university. An account of some of these will be found in Mr. Abraham Flexner's report to the Carnegie Foundation for the Advancement of Teaching on Medical Education in the United States and Canada, issued in 1910. By a strange irony of fate Mr. Carnegie's name has been taken by a "university" which has its seat at Wilmington, in the State of Delaware, from which it holds a charter. An account of this institution is given in the *Journal of the American Medical Association* of November 18th, 1911. Affiliated with the "Carnegie University" is the National Institute of Mechano-therapy of New York City chartered by the State of New York. It has an imposing staff of officers and "regents" whose varied and manifold titular distinctions almost exhaust the resources of the alphabet. Among these learned suffixes the letters M.D. are conspicuous. The effect of this array is somewhat diminished, however, when we learn from the *Journal* that a careful search of official records has failed to reveal the existence of these men of many letters in any list of licensed practitioners of medicine. Our contemporary therefore suggests that these gentlemen may have conferred their degrees on each other. We have heard of a meeting of a medical body which was attended by two persons. One of these elected the other President, and that gentleman thereupon elected to the office of Secretary the "dearly beloved Roger," who formed the rest of the assembly. But let us hear what the institution has to say for itself. The "Annual Announcement" states that the "Carnegie University is the oldest and most celebrated institution of learning of its kind in the United States of America. It was initiated, promoted, and financed by a few of America's most prominent gentlemen in the financial as well as the professional world. These gentlemen knowing the progress that Drugless Therapy (healing) has made in the last twenty years, and understanding the great future for this science, saw the necessity of devoting one of the colleges of the great university to Drugless Therapy, so that those earnestly desiring to become drugless physicians and bloodless surgeons could acquire a thorough and scientific knowledge of the various sciences which constitute the natural method of healing. The university is named in honour of Carnegie, the great philanthropist, who has done so much for the dissemination and promulgation of knowledge and education." We have no doubt that Mr. Carnegie duly appreciates the honour thus done him. It would be interesting to know whether he has given the institution which has taken his name a free library; we cannot help thinking that a present of books, such as an English Sovereign once sent to the University of Oxford, might be useful. The university, it is further stated, "gives instruction in all Drugless Arts, Sciences, and Philosophies, and in any other Art, Science, or Philosophy. It also confers degrees in any art, science, or philosophy." This is a fairly ambitious programme, for "Drugless Art, Sciences, and Philosophies" include the whole of knowledge, except, we suppose, that of drugs, and even that might be covered by the words "any other Art, Science," etc. The diplomas issued by the *Carnegiana Universitas* are described as magnificently engraved pieces of white parchment, 19 by 24 in. When it is added that the recipient is told that whatever "course" he may take "the degree is legal in every country on the globe, and the graduates are protected by the high standing of the corporation, with its immense resources," it will be seen that the successful candidate gets full value for his money. The diploma reminds us of that given to the candidate in the *Malade Imaginaire*, which gave *licentiam, virtutem et puissanciam medicandi* * * * *et occidendi impune per totam terram.* The examination itself could not be bettered for absurdity, even by Molière. A member of the staff of the *Journal of the American Medical Association* wrote to say that he was going to England to start an office as a bonesetter and asking if he could have a diploma in mechano-therapy without going through the course. He offered to pass an examination if the questions were sent him, and to pay the fees. The offer was at once accepted. A few of the questions asked and the answers—purposely drawn up so as to show ignorance rather than knowledge—are given to show the character of the examination and the sort of stuff that was accepted as entitling the candidate to the degree of Doctor of Mechano-therapy. Embryology was described as the study of the newborn baby and how to care for it. The portal circulation was stated to be the circulation of the chile and chyme which is found in the stomach when the food is being digested. But the cream of the thing is the description of the fornix, which is said to be "that part of the throat at the back of the tonsils which is affected in catarrh. An adjustment of the vertebrae of the neck will often help it." Keratitis should be treated by manipulating the muscles and nerves of the back, and by adjusting the vertebrae of the neck. Malaria is to be treated by massage to make the bowels move, and the spine should be adjusted to improve the circulation. After this exhaustive examination the candidate was informed that he had passed "very satisfactorily," and that the Carnegie University had conferred on him the degree of Doctor of Mechano-therapy. This valuable diploma is to be had for the trifling sum of 50 dols. (£10). The process of graduation could scarcely be made easier or cheaper. If the *Carnegiana Universitas* continues to flourish, the number of "drugless physicians and bloodless surgeons" will increase and multiply at a rate that might supply the Chancellor of the Exchequer with doctors enough to work his *monstrum horrendum informe* of an

Act. This would have the financial advantage that the drug part of the medical benefit could be dispensed with. There are, of course, certain difficulties in the way, but Mr. Lloyd George is not a man to be beaten by trifles, and he would doubtless get a large measure of support among the classes on which he can exert his hypnotizing influence if he proposed to repeal the Medical Acts.

SLEEPING SICKNESS.

ON January 17th Dr. John Rennie, Lecturer in Parasitology at Aberdeen University, delivered an address on sleeping sickness and *Glossina*. He said the earliest known undoubted reference to the disease was to be found in a book, entitled *Physical Observations on the Coast of Guinea*, written by John Atkins, a naval surgeon. The disease was there recognizably described under the name of the "sleeping distemper." The work was dated 1742. The next reference to the disease was a description of it as observed in West Africa in 1803—100 years before the parasite transmitting the disease was identified. In 1882 its distribution from Senegal, on the extreme west to Loanda, including the islands in the Gulf of Guinea, was known, and in 1898 its existence on the Niger and at Stanley Falls, on the Congo, was noted. Having pointed out that sleeping sickness was clearly a West African disease, Dr. Rennie referred to its introduction into the eastern portions of the Continent. In 1900 it was discovered in Uganda, and at that time it was so widespread that it must have been in existence in that region for some time. Evidence showed that the northern shores of Lake Victoria Nyanza were infected about 1896. It seemed clear that the flies in Uganda were infected by Congolese followers of Stanley. Those men had contracted the disease where it was endemic. The outbreak in Uganda had all the characteristics of a newly imported disease, and spread in epidemic form with great rapidity, so that, after a duration of about six years, the population of the district was reduced from 300,000 to 100,000. At Entebbe in 1902 Bruce found that 30 per cent. of the population harboured the parasites—trypanosome—in their blood. Fifteen species of the *Glossina palpalis*, the tsetse fly, which was first suspected of transmitting the malady, were known. Their range on the north was restricted to a line drawn from Senegal, across to Lake Chad, and thence to about the fourth parallel on the east coast, and, on the south, to a line from about Cape Frio to Zululand. They had also been discovered in Southern Arabia. Dr. Rennie, in conclusion, alluded to the different methods of dealing with the scourge adopted in the infected areas. They included the establishment of segregation camps, the compulsory removal of the natives from the shores of Lake Victoria Nyanza, and the clearing, so far as possible, of the regions where the fly existed.

THE CLASSIFICATION OF CAUSES OF DEATH.

THE Registrar-General has issued to all Medical Officers of Health an official copy of the *Manual of the International List of Causes of Death* as adopted for use in England and Wales by Dr. T. H. C. Stevenson, Superintendent of Statistics. The object of the publication is to define the headings of the mortality tables in the annual report of the Registrar-General, and to enable Medical Officers of Health to prepare local tables on lines uniform both with each other and with those recently laid down for use in the General Register Office. The number of possible fatal diseases included in such a list as that contained in the *Nomenclature* of the Royal College of Physicians of London is so great that separate returns for each would be out of the question in tables showing the relation of causes of death, sex, age, locality, occupation, etc., either singly or, as is more often required, in combination. Though it is recognized that mortality-rates from a single well-defined disease or small groups of closely related diseases are more reliable for the purposes of comparison than mortality from groups, and that, therefore, the group headings are on the whole of much less importance than those relating to single diseases, yet grouping is inevitable in the preparation of tables, and this implies a certain amount of classification of disease. For this country the determination of the terms to be regarded as synonyms is supplied by the *Nomenclature*, but difficulties arise in respect of a large number of indefinite or otherwise objectionable terms excluded from the *Nomenclature*, but still used in death certificates. The *Manual* contains an index which refers the various minuter classifications, whether sound or unsound, to the various heads included in the table of the International List of Causes of Death, which underwent a second decennial revision at the conference in Paris in 1909. This list will not only facilitate the comparison of English mortality with that of other countries, but provide a common standard for the compilation of mortality statistics in this country, since the Local Government Board has already adopted it as the basis of the skeleton tables issued for the use of medical officers of health. The difficulty of arranging for the continuity of British records was felt to be an objection to the change, but it has been found possible to overcome this objection almost completely by subdividing a number of the titles of the international list. The continuity thus secured is substantial, though not absolute; none of the minute differences unprovided for are of any substantial importance, and are of less magnitude than many changes which the necessary development of the lists hitherto in use in the General Register Office has from time to time involved. Dr. Stevenson, in his introduction, refers to the definition of primary and secondary causes of death. The following note on the subject occurs in the "Suggestions to Medical Practitioners Respecting Certificates of Cause of Death," issued last October: "By 'primary cause of death' is meant (in the case of deaths from disease) the disease present at the time of death, which initiated the train of events leading thereto, and not a mere secondary, contributory, or immediate cause, or a terminal condition or mode of death. Acute specific diseases, if of recent occurrence, are to be considered the primary cause of death, even though the actual disease, as tested by power of infection, be no longer present at the time of death—*e.g.*, measles (primary), five weeks; bronchopneumonia (secondary), ten days. A terminal condition or mode of death should not be entered as a secondary (or contributory) cause. In a very large proportion of instances the statement of the primary cause gives all the information required; in these cases nothing is gained by adding as a secondary cause such a condition as syncope, heart failure, coma, exhaustion, etc. Thus a certificate of pulmonary tuberculosis is not improved by addition of 'exhaustion' as a secondary cause, though if a complication such as 'pneumothorax' had supervened this should be noted as a contributory cause of death." Any medical officer of health who has not received a copy of the *Manual* should apply to the Registrar-General, General Register Office, Somerset House, London, W.C.

THE WORLD'S GREATEST MEN.

BOSWELL, in his *Life of Samuel Johnson*, says: "Once, when checking my boasting too frequently of myself in company, he said to me: 'Boswell, you often vaunt so much as to provoke ridicule. You put me in mind of a man who was standing in the kitchen of an inn with his back to the fire, and thus accosted the person next him: "Do you know, Sir, who I am?" "No, Sir," said the other, "I have not that advantage." "Sir," said he, "I am the *great* Twalmley, who invented the new floodgate iron."'" What the great Twalmley was so proud of having invented was a kind of box-iron for smoothing linen. This, as might be expected, would appear to be Mr. Carnegie's idea of greatness. Some time ago he drew up a list of those whom he considered the twenty greatest men whom the human race had as yet produced. The list is as follows, the names being placed, we presume, in order of merit:

Shakespeare; Morton, discoverer of ether; Jenner, discoverer of vaccination; Neilson, inventor of hot blast in manufacture of iron; Lincoln; Burns, the Scotch poet; Gutenberg, inventor of printing; Edison, applier of electricity; Siemens, inventor of water meter; Bessemer, inventor of steel process: Musnet, inventor of steel process; Columbus; Watt, improvement on steam engine; Bell, inventor of telephone; Arkwright, inventor of cotton-spinning machinery; Franklin, discoverer of electricity; Murdock, first to employ coal as illuminant; Hargreaves, inventor of spinning; Stephenson, inventor of locomotive; Symington, inventor of rotary engine. We are pleased, though a little surprised, to see that Shakespeare heads the list. We note, too, with satisfaction that Morton and Jenner come next. The name of Burns is inevitable in any list of great men drawn up by a Scot. Columbus naturally has a place as a discoverer of America, in which Mr. Carnegie accumulated his £86,000,000. The presence of Lincoln we take to be a homage to the American spirit. All the rest, with the exception of Franklin—who did not, by the way, discover electricity, though he was a pioneer of electrical science—are "Twalmleys." Mr. Frederic Harrison scoffs at Mr. Carnegie's "greatest men," and asks, "If we once begin to insert the authors of modern mechanical inventions, where shall we stop, and where do automobiles and aeroplanes come in, or Marconigrams and kinematographs, nay, even fountain pens, gramophones, antipon, and pink pills—and all the damnable dodges invented to make us all go faster, work harder, and worry each other worse than man was ever worried before?" The enterprising editor of the *Review of Reviews* submitted Mr. Carnegie's list to about one hundred chosen authorities in Great Britain and on the Continent. The result of the voting was the following list: Shakespeare, greatest of modern poets; Columbus, discoverer of America; Julius Caesar, "the Roman Empire"; Gutenberg, inventor of typography; Newton, founder of modern astronomy and physics; Dante, father of modern poetry; Darwin, founder of new science; Stephenson, inventor of locomotives; Homer, ancient poetry; Buddha, founder of Buddhism; Aristotle, ancient philosophy; Michael Angelo, painter, sculptor; Franklin, discoverer of electric forces; Abraham Lincoln; Moses, early theocratic civilization; Socrates, Athenian philosopher; St. Paul, Apostle of Christianity; Watt, inventor of steam-power machines; Confucius, Chinese philosopher; Charlemagne, founder of European State system; Luther, Apostle of the Reformation. Thus, of Mr. Carnegie's "greatest men," only seven remain in the final list. This list is even more interesting than that of the Pittsburgh ironmaster, as showing the point of view of the average educated man. It will be noticed that in this final list medical research is not represented at all. A list of the world's greatest men which does not contain the name of either Pasteur or Lister is so remarkable that one would like to feel the bumps of the persons to whom Mr. Carnegie's list was submitted, as Charles Lamb wished to do in the case of the man who thought Milton was no poet. When a *plébiscite* was taken by *Le Matin* a year or two ago on the subject of the greatest Frenchman of the nineteenth century, Pasteur headed the list by an enormous majority.

PAYMENT OF DOCTORS' BILLS.

THE Northern Assurance Company has issued a scheme of insurance of medical expenses, otherwise called "payment of doctors' bills," and the leaflet in which it is set forth is of more general interest at the present moment than most of the alluring documents with which the assurance companies adorn our tables. It points out that, while the problem of providing for the medical attendance of the industrial population of the country is dealt with in the National Insurance Act, its provisions do not extend to persons receiving more than £160 a year from their employers by way of salary. This statement, as is well known, requires qualification, since the Act applies to all persons engaged in manual labour whatever their annual income. Leaving this point aside, however, we come to the scheme which the company has devised. It proposes to provide for the payment of medical expenses incurred by those who are outside the benefits of the National Insurance Act, and it is interesting to note the terms which this company—old, for it was established in 1836, and wealthy, for it has accumulated funds of over seven and a half million—has put before the public as a business proposition. In the first place, it may be noted that the scheme is carefully limited. It applies to men only: "policies are not issued to females." All policies cease at the age of 60, and no new policies are issued after the age of 50. A man taking out a policy at the age of 40 or over is required to pay a premium which is higher by close on 30 per cent. The policy will not be issued to young persons; the holder must be 19 years or older. The premiums are governed partly by the age of the applicant, and partly by the maximum sum payable in any one year. If this sum is £10, the policy-holder aged 40 or younger pays 18s. a year; if over 40 he pays 23s.; if the sum be £20 he pays 23s. or 30s., according to age at entry. But the maximum sum payable is guarded by the provision that the medical expenses at these rates must not exceed "£1 per week on the average during the period of disablement." The policy covers "medical expenses, including the cost of medicines and surgical appliances, incurred in connexion with any sickness or accident which incapacitates a policy-holder from following his usual occupation." So far as the clause last quoted goes, the benefit seems to be more or less on all fours with that proposed to be given under the Insurance Act, but its duration is limited by the maximum sums payable, which may be exhausted in ten or twenty weeks respectively. The benefit offered by the company ceases at the age of 60; under the Act there is no age limit, a person once insured will continue in medical benefit to the end of his life, though sickness and disablement benefits cease at the age of 70. The policy issued by the company would apparently be a yearly contract, that is to say, the company might, if it thought fit, refuse to renew a policy at the expiration of any year. If the demands made by a policy-holder were frequent and high, it seems not unreasonable to suppose that the company might be unwilling to renew, and in this way would not allow itself to be burdened by chronic cases; that it is not ready to accept persons likely to suffer from much ill-health or from a chronic illness appears to be confirmed by two questions in the proposal form: "4. Are you free from any physical defect or infirmity, and are you now in, and do you ordinarily enjoy, good health?" and "7. Have any of your near relatives died of or suffered from consumption or tubercular disease? If so, give particulars." There is another question which appears to suggest that the company might not be disposed to accept a proposal from a man who indulges in certain hazardous amusements. This is question No. 10: "Do you engage in any of the following: Football or polo playing, motor cycling, hunting, mountaineering, racing of any kind on horseback or on wheels? If so, state which." It may be concluded from the existence of this proposal form that a candidate is required to submit to medical examination, and that the company only accepts healthy lives. With these limitations—and there may of course be others, or these may be more closely defined in the policy, with a copy of which we have not been favoured—the company considers it necessary to charge a young man 18s. a year for a maximum sum payable for medical expenses of £10 in respect of any illnesses or accidents in any year. As the company offers to arrange larger or smaller benefits (within certain limits),

we may take the Treasury's 6s. and conclude that the company would for that sum provide £3 6s. 8d. for medical expenses in any one year. As the minimum average weekly payment in respect of medical expenses for which the company is willing to arrange is 10s. a week, this would be a provision for illnesses or accidents incapacitating a policy-holder from following his usual occupation during, say, seven weeks in any one year. For a policy-holder entering at the age of 40 it may be assumed that the company would, for the annual premium of 23s., provide up to the age of 60 something under 53s., or, roughly, medical expenses for illnesses and accidents incapacitating for about five weeks in any year. The sickness periods in either case are a good deal longer than the data used by the Treasury actuaries, and granting, what is of course the case, that the company intends to make certain of a profit on its transaction, still it seems fair to conclude that, in the opinion of its actuaries, the Government actuaries have put the rates of sickness upon which their calculations are based too low.

THE INTERNATIONAL OPIUM CONVENTION.

THE International Opium Conference, which assembled at The Hague early in December, and at which twelve nations were represented, has, with commendable promptitude, completed its labours and produced an International Convention, which was signed by the Plenipotentiaries of the Powers taking part in the Conference on Tuesday afternoon. Votes of thanks were accorded to the Queen of the Netherlands and her Minister for Foreign Affairs (Dr. de Marees Van Swinderen), and likewise to Bishop Brent, of the Philippine Islands, one of the American delegates, who acted with great ability and courtesy as President at twenty-five plenary sittings of the Conference. The text of the Convention is now in the hands of the respective Governments, and will, it is hoped, be speedily published in detail. It consists, we understand, of six chapters, and contains twenty-five articles, dealing successively with the new restrictions which are proposed in regard to the production, sale, import, and export of raw opium, prepared opium, medicinal opium, morphine, cocaine, and other alkaloids liable to give rise to addiction. Articles have also been inserted providing for the co-operation of other Powers not represented at the Conference, and for the ratification and coming into force of the Convention, and also of the legislation it will necessitate. The assembly of such a conference and its successful issue in a world-wide Convention marks an epoch in the progress of international law in matters dealing with social welfare, and the physical, moral, and mental health of mankind. Great Britain has long had painful experience of the opium traffic as between India and China; public opinion has been accordingly prepared for vigorous and practical handling of the question. She also made her presence at the Conference conditional upon the inclusion of morphine and cocaine within the purview of the work of the Conference. Such inclusion, it is understood, raised questions of vested interests and trade influence which had to be set off against the social and humanitarian ideals that have given force to the crusade against the abuse of habit-forming drugs. We are informed that even if all the hopes which were entertained at the outset of the Conference have not been fulfilled, much solid work has been done, new international law has been laid down, a broad base upon which future additions may be erected has been constructed, and the prevention of drug abuse has been recognized as a solemn international duty. When we recall the nationalities represented and the difficulty of concerted action on their part in other questions, we may regard the final unanimity, which we are assured was eventually attained, as a triumph of diplomacy. The Plenipotentiaries who on Tuesday last affixed their signatures to the Convention and protocol on behalf of Great Britain were Sir William Collins, Sir William Meyer, and Mr. W. Max Müller.

A SHORT WAY WITH LONG SPEECHES.

LONG speeches are one of those afflictions from which audiences of all kinds devoutly pray to be saved. This is all the more the case since it often happens that the less a man has to say the longer he finds it necessary to take in saying it. Short of the guillotine, rules as to the length of speeches are apt to be evaded, or a man will make up in the number of times he speaks for the shortness of time allowed him for any particular speech. There are men whom no amount of coughing, "movement" (as they say in the French Chamber), cries of "Question," and so forth can disturb in the even tenor of their dreary way. It would prevent much waste of time and loss of temper if we could take a lesson from one of the peoples of Central Africa, who have hit on an effective plan of limiting the output of talk from their orators. When a member of the tribe speaks in public he is obliged to stand on one leg during the whole of his speech. We commend this sensible method to the attention of all assemblies, from the Mother of Parliaments downwards. If in the phrase "a speaker is on his legs" the word "leg" were substituted as an amendment, the cure would be effectual. Formerly, according to Dr. Farquharson, no Cabinet Minister thought he had discharged his duty unless he spoke for an hour. Mr. Asquith says all that he wishes to say in half the time; some of his colleagues, however, more than make up for his brevity. What a saving of time, what a help in the transaction of political business, what a gain to the commonweal, it would be if certain orators had to deliver their rhapsodical periods on one leg! Even here, however, difficulties might arise. A man with one leg would obviously have the audience at his mercy. It was said, we think by Lord Sherbrooke, that a deaf member who was seen to be eagerly trying to catch what fell from a prosy speaker was throwing away his natural advantages. It might be felt by an audience addressed by a one-legged orator that he was making an unfair use of his deficiency.

ANOTHER VACCINATION CHALLENGE.

IN the January number of the *Vaccination Inquirer* a correspondent addresses a challenge to Dr. Drury or any other public vaccinator. Mr. James McGhee offers to hand over the sum of £10 to any charity in the event of any one challenged succeeding in producing in him any semblance of small-pox by means of inoculating him "with the secretion of the pustules of small-pox." Mr. McGhee says he is a firm disbeliever in the "germ causation" of disease. Possibly Dr. Drury and many others might feel incited to break the law relating to the inoculation of small-pox in order to convince Mr. McGhee but for the fact that it is a matter of no importance whatever whether Mr. McGhee believes in the germ causation of disease or not and the experiment would add nothing to the store of medical knowledge. Nothing is more certainly demonstrated by incontrovertible evidence than the possibility of conveying certain diseases (small-pox being one of them) by means of inoculation. The *Vaccination Inquirer* has often used the argument that inoculation of small-pox in days gone by was a great factor in the prevalence of small-pox in those days. In bold letters as a headline to Mr. McGhee's quaint letter the *Inquirer*, referring to the challenge, says: "The only Effective Way of Meeting the Scaremongers." If this expresses the belief that small-pox cannot be conveyed by inoculation with small-pox, then the *Inquirer* must have abandoned a former argument. There are, however, so many inconsistencies and contradictions in the arguments of the antivaccinators that another addition to the list causes no surprise.

THE INSURANCE COMMISSIONERS AND THE MEDICAL PROFESSION.

PROPOSAL FOR A CONFERENCE.

IN pursuance of the policy of holding, before drafting the regulations to be made under the Act, preliminary private conferences with representatives of bodies interested or concerned in the National Insurance scheme, the Commissioners for England have addressed the following letter to the British Medical Association:

National Health Insurance Commission (England).
Whitehall, London, S.W.
24th January, 1912.

Sir,

The National Health Insurance Commissioners have decided, for their assistance in bringing the Insurance Act into operation, to take the earliest opportunity of personally conferring with representatives, widely selected, of the chief sections of the community specially concerned. Conferences with representatives of prospective insured persons have already taken place, and it is considered that the time has now arrived when it would be of material assistance to the Commissioners to obtain, in a conference, suggestions from representatives of the medical profession on certain important questions of procedure preliminary to bringing the Act into operation.

The National Health Insurance Joint Committee and the Insurance Commissions for England, Scotland, and Wales respectively propose accordingly to hold a Conference on Friday, February 2nd, with representatives of the medical profession; and the British Medical Association is invited to appoint twenty members, selected from England, Scotland, and Wales, to attend the Conference, which will be held at 3 p.m. A further communication will be addressed to you as to the place of meeting. A similar invitation is being addressed to the General Medical Council and other medical bodies.

The point which it is specially desired to discuss relates to the selection of the medical members of the Advisory Committee, by whom the Commissioners must be advised in the framing of regulations in accordance with Section 58 of the Act; and the Commissioners will also be glad to hear the views of those present on other matters of procedure in bringing the Act into operation which the representatives of the medical bodies may desire to bring forward.

I am, Sir,
Your obedient servant,
(Signed) R. W. HARRIS,
Assistant Secretary of the
Joint Committee.

The Secretary,
British Medical Association,
429, Strand.

Offices of the British Medical Association,
Medical Department, 429, Strand,
London, W.C.,
January 24th, 1912.

Sir,

Your letter of even date, inviting the Association to appoint twenty members to attend a Conference on February 2nd to consider certain matters in connexion with the bringing of the Insurance Act into operation, was considered by a Committee of the Association which was sitting at the time of its receipt. I am instructed to ask whether the Commissioners could see their way to postpone the proposed Conference until after the Special Representative Meeting of the Association, to be held on February 21st and 22nd. The Committee feels that such a postponement would be conducive to the object which the Commissioners have in view, namely, to ascertain the opinion of representatives of the profession, as, at the Special Representative Meeting above referred to, instructions will be given to the Representatives of the British Medical Association which would put them in a much better position to voice medical opinion at such a Conference.

The Committee is still sitting, and I should be obliged if you could let me have an answer this afternoon as to the possibility of postponement of the Conference.

I am, Sir,
Yours faithfully,
(Signed) ALFRED COX,
Acting Medical Secretary.

The Assistant Secretary,
Joint Committee,
National Health Insurance Commission,
Whitehall, London, S.W.

National Health Insurance Commission,
Whitehall, S.W.,
24th January, 1912.

Sir,

Your letter of to-day's date has been considered by the Joint Committee of the National Health Insurance Commissions, who were sitting at the time of its receipt. I am instructed to reply that the principal purpose for which the Conference has been convened would be defeated if it were postponed as suggested, because the Committee must under the Insurance Act proceed to appoint an Advisory Committee without avoidable delay, in order that the preparation of Regulations may be proceeded with. The Advisory Committee must include medical practitioners who have had experience of general practice, and the Commissioners would think it desirable to include other members of the medical profession. They would much value the assistance which they could obtain from such a Conference as has been proposed in arriving at a decision as to the best method of selecting such practitioners and they would greatly regret to be deprived of any assistance from the British Medical Association in this respect.

It appears to the Committee, however, that the ground for postponement suggested in your letter rests upon a misconception of the object of the Conference. It is not contemplated that those attending would act in such a strictly representative capacity, or speak with such delegated authority on behalf of their respective societies as would necessitate their previously receiving instructions of the character which you suggest.

In previous conferences of the kind (which I may say have in no case been public), no expression of opinion has been regarded as committing the organization to which the speaker uttering such opinion belongs. This has not prevented the Conferences from affording great assistance to the Commissioners, and it is understood that they were found useful by those who attended. Certain important societies which took part in the Conferences that have already been held by the Commission had in contemplation meetings analogous in character to the Representative Meetings to which you refer, in which the policy of the Societies on important questions affecting them under the Act would be determined. It was found, as the Commissioners have subsequently learnt, that the explanations elicited in the Conference were of material assistance to them in preparing for such meetings, and that on the other hand the attitude of the Society was in no sense prejudiced by the fact of persons nominated by it having taken part in the Conference convened by the Commission.

In view of these considerations, the Commissioners trust that the British Medical Association will see their way to appoint members to take part in this particular Conference on Friday week.

I am Sir,
Your obedient Servant,
(Signed) R. W. HARRIS,
Asst. Secretary to the Joint
Committee.

Alfred Cox, Esq.,
Acting Medical Secretary,
British Medical Association.

The State Sickness Insurance Committee resolved to refer the invitation to the Council of the Association, which meets on Wednesday next, with an expression of opinion, by a majority, in favour of accepting the invitation.

It will be remembered that the Commissioners have already held such private preliminary conferences with officials and prominent members of friendly and benefit societies, of the principal collecting societies and companies engaged in industrial insurance, and of trade unions (including those which have women members), and also with some of those interested in women's societies whose members will be affected by the Act.

THE rapidity of the wastage of men from a force on active service is illustrated by the experience of the French in Morocco. There has been very little fighting, yet, according to a dispatch of the *Times* correspondent, the white colonial infantry and artillery have lost 48 per cent. by invaliding, and 44 officers and 650 non-commissioned officers and men have died. That in this particular instance climatic conditions may have had much to do with the high rates of mortality and invaliding seems to be proved by the fact that the Algerian elements of the force has lost only 4.1 per cent,, and the Senegalese only 0.4 per cent.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

NORWICH.

Presentation to Dr. Michael Beverley.

At a meeting held in Norwich early this month a presentation was made to Dr. Michael Beverley. It consisted of a silver rose bowl, and a gold watch and bracelet for Mrs. Beverley, accompanied by an album and a cheque for the residue of the sum subscribed. The following inscription appeared on the bowl:

Presented to Dr. Michael Beverley, J.P., by old friends and patients, as a mark of their affectionate esteem and appreciation of the many services rendered by him during a period of fifty years' active work in the city of Norwich and surrounding district.

Mr. W. F. Harmer, who made the presentation, said he was unable to call to mind any one who had held exactly the same position in Norwich as Dr. Beverley, and his departure would leave a gap very difficult to fill. It was forty years since he had first made the acquaintance of Dr. Beverley, who was then a candidate for a vacant post at the hospital. Dr. Beverley had steadily and unobtrusively gained the esteem of the public, and had been assisted in that by Mrs. Beverley, whose recovery from her recent illness he was glad to know was now far advanced.

Mr. S. Cozens-Hardy referred to the fact that Dr. Beverley had for no fewer than twenty years held the onerous position of Honorary Secretary of the East Anglian Branch of the British Medical Association, and had been President of the Branch and its representative on the Central Council. He referred to Dr. Beverley's work as Chairman of the Hospitals Committee of the Association, in which capacity he had presided at meetings in London, the result of one of which had been the movement for the abolition of out-patient recommendations; this system had, in fact, been abolished at the Norfolk and Norwich Hospital. In accordance with the doctrine which he had preached, Dr. Beverley himself resigned from the medical staff on attaining the age of 60. He became vice-chairman and subsequently chairman of the board of management, and had been instrumental in advancing its interest. Whilst vice-president he raised £1,100 for the hospital laundries, and it was on his suggestion that the Duke of Norfolk on his marriage gave £1,000 for the promotion of ophthalmic work at the hospital. Dr. Beverley had also been successful in introducing ladies on to the board of management, an innovation which had proved to be of great advantage. For over forty years Dr. Beverley had been connected with the great hospital, and on his resignation it was charming to hear how grateful the old people spoke of his services, his kindness, and sympathy.

Other speeches were made, including one by Dr. Edgar Barnes, who testified to an old intimate friendship with Dr. Beverley.

Dr. Beverley, in reply, stated that sympathy in affliction and cheerfulness by the bedside were important elements in promoting recovery, though he could not go so far as to accept as otherwise than a doubtful compliment what was said to him by an old lady to whom he had spoken in a jocular vein, "They du say, sir, that yare jokes do more good than yare physic." In some reminiscences of his career Dr. Beverley said as soon as he left school he was apprenticed, according to the then prevailing custom, to Mr. William Bransby Francis, surgeon, of Norwich, where he had to learn to make pills, compound medicines, and even at that early age to treat sick people, and particularly babies, whom he had vaccinated in large numbers. He had at this stage in his career occasionally encountered typhus fever, which, thanks to better sanitation and improvement in the habitation of the poor, was no longer seen. Many changes had taken place since those days among the citizens of Norwich, and Sir Peter Eade, to whom he had been clinical clerk, was the only member of the then hospital staff now alive. After studying in London and Edinburgh he had applied for the degree of M.D. from the latter university, and had received it in spite of the fact that he had not attained the legal age of 21 years. This laxity, however, had had the good result of allowing him to spend a year in Paris. Entering on his duties as house-surgeon to the Norfolk and Norwich Hospital on December 28th, 1864, he remained a resident officer for six years, and had to add to the duties usually imposed on the incumbent of such an office that of superintendent of the nurses, who, although not trained according to the present standard, were endowed with an immense amount of common sense and endurance, and carried out their arduous duties faithfully and well; it had been his pleasure afterwards to secure the admission of some of them in the Great hospital, where they ended their days in peace and comfort. Dr. Beverley then described how, after paying a visit to Edinburgh with an introduction from Mr. Cadge to Mr. Lister, he returned to Norwich to introduce what was then known as the Listerian system. In conclusion, he said that he proposed to expend the cheque he had received so as to secure to his children a heirloom they had often expressed a desire to possess.

WEST YORKSHIRE.

Doctors and the Friendly Societies in Halifax.

The Halifax Trades and Friendly Societies' Council have had a series of evenings for the discussion of the Insurance Bill. In response to an invitation from the Council addressed to the Halifax Division of the British Medical Association, Dr. Drury was deputed to attend recently to speak on "State insurance from the doctor's point of view." Great interest was shown in the proceedings by a crowded audience. The medical profession, Dr. Drury said, was united and organized at the present moment more completely than any other body of workers, although what had been printed in certain newspapers might have led some of them to think differently. There were domestic and other differences over the Insurance Act, but there was one solid and immovable phalanx indissolubly united on the main points. The profession was in deadly earnest. Medical meetings in different parts of the country might have been characterized by excitement and exaggeration, but beneath all there was a seriousness of purpose which would have to be taken into account. The profession was pledged almost to a man to decline service on terms anything like those indicated by Mr. Lloyd George. A short history of past legislation as it affects the medical profession was given, and death certification, the Poor Law Medical Service, and the appointments under the Education Authority were cited to show the manner in which the State had dealt with the profession. The State, said Dr. Drury, had gone one step further and had introduced the thin if not the thick edge of the nationalization of doctors. The operations of the Act would strike at the very root basis of medical practice. The crux of the whole difficulty was that the Chancellor had shaped his model on the friendly society medical contract plan. Was it surprising that doctors throughout the length and breadth of the land were gravely anxious about the future of the profession? The Act was to compel all the 14,700,000 persons who were not already friendly society members to accept medical service on the friendly society club doctor plan with possible slight variations. The Royal Commission on the Poor Laws had condemned this plan. General and popular opinion was against contract practice. The chairman at the last Annual Conference of Friendly Societies, held at Edinburgh, stated that a canvass of their medical officers showed that the majority were not satisfied with the terms and conditions of service, and, whether the Insurance Bill went through or not, the societies would have to reconsider their arrangements with the doctors. Contract practice destroyed some most essential elements in the relationship between doctor and patient. The Insurance Act took in hand millions of persons who at present were well served medically and who acted honourably towards the profession. It was the financial support of these millions, and of persons who were more comfortably off, which alone enabled medical men to serve clubs. The placing of these millions on a basis anything like the present terms of club practice was the grievance which must be remedied, and such terms could not form the basis of any scheme which the profession would work. The members of the medical profession had, in effect, been told by the Chancellor to open their mouths and shut their

eyes and see what the Commissioners would send. As to the question of the terms on which the profession would serve, all he could say that night was that the profession had nothing to sell at anything like the price fixed in Mr. Lloyd George's actuarial calculations, and many details were required from the Commissioners before the matter could be considered. Remarking that the British Medical Association was alone the mouthpiece of the whole profession, Dr. Drury reiterated the six cardinal principles and the important resolutions concerning them. A vigorous discussion followed. Dr. Drury was thanked heartily for his speech, and he was cordially invited to address the Trades and Friendly Societies' Council again on a future occasion.

SOUTH WALES AND MONMOUTHSHIRE.

Cardiff Guardians and Provision for Consumptives.

The Cardiff Guardians have now definitely decided to adopt the plan suggested by the subcommittee, namely, to purchase land and erect their own sanatorium and hospital. A site of 25 acres near Penarth has been offered by the Marquis of Bute at £200 per acre, and this was unanimously considered to be the best and cheapest offered.

The importance of the step is obvious, especially in view of the provisions of the Insurance Act. The Clerk pointed out that, at present, many acute cases, and some consumptive patients, were mixed among healthier people in Poor Law wards totally unfitted for the purpose. The guardians were at present paying £600 a year for maintaining nine or ten patients in sanatoriums; one patient alone had cost them £400. The relief to the ratepayers would thus be very considerable, and the benefit to the sick inmates incalculable under the new scheme.

LONDON.

London County Council Appointments.

At the meeting of the London County Council on January 24th an urgency report by the General Purposes Committee was submitted dealing with a suggestion by Dr. Hamer, the newly appointed medical officer for London, relative to the reorganization of the public health service in London under one control. Dr. Hamer strongly urged that, if the post of assistant medical officer which he recently vacated was to be filled, the new officer should be a deputy medical officer and deputy school medical officer. He suggested a salary of £1,000 a year. The General Purposes Committee, while reserving for further consideration the whole question of the reorganization of the public health department, concurred in Dr. Hamer's suggestion.

The Council decided to invite applications for the new post at the salary suggested by Dr. Hamer. The present members of the Council's medical staff will not be precluded from applying; the age of applicants must not exceed 50 years.

The Education Committee of the Council on January 25th approved the following as medical assistants in the Public Health Department at commencing salaries of £400 a year: Miss Agnes Agatha Parson, M.B., B.S.Lond., D.P.H.; Miss Josephine Letitia Denny Fairfield, M.D., D.P.H.; Miss Jane Reid Foulds Gilmour, M.B., Ch.B., D.P.H.; Mr. James Graham Forbes, M.A., M.D., M.R.C.P., D.P.H.; Mr. Frank Chas. Lewis, M.R.C.S., L.R.C.P., M.B. (Hons.), B.S., M.D., D.P.H.; and Mr. Alexander John Malcolm, M.R.C.S., L.R.C.P., D.P.H.

The Annual Report of the Asylums Committee.

The recently issued annual report of the Asylums Committee of the London County Council for the year 1910[1] shows that on January 1st of that year the total number of lunatics for whom the Council was primarily responsible to find accommodation was 19,914. On that date there were also 6,676 lunatics in Metropolitan Asylums Board Asylums, and 413 in workhouses or with relatives and friends, giving a total number of lunatics chargeable to London of 27,003. On January 1st, 1911, the numbers were as follows: London County Council cases, 20,158; in Metropolitan Asylums Board Asylums, 6,875; and in workhouses or with relatives or friends, 448—giving a total of 27,481. The above figures exclude private patients at Claybury Hall, but include "private list" patients, that is, patients admitted in the first instance as pauper patients but for whom afterwards the pauper maintenance rate is paid, and "private patients" at the Manor Asylum and in the Epileptic Colony. The above figures show an increase of the total lunatics for the year 1910 of only 478, as compared with the average increase of 529, and an increase of London County Council lunatics of 244, as compared with an average of 455. The ratio of all pauper lunatics chargeable to unions and parishes in the county of London on January 1st, 1911, per 1,000 of estimated population, was 5.71, as compared with 5.61 per 1,000 of population on January 1st, 1910. Taking individual parishes, Strand heads the list with a ratio of 12.8 per 1,000 of population, and Hampstead is the lowest, with 2.7 per 1,000.

Accommodation.

On January 1st, 1911, the accommodation available in London County Asylums, excluding that for private patients at Claybury Hill, was 20,007, as compared with 19,867 beds on January 1st, 1910. It is satisfactory to note that during the past two years over 99 per cent. of London certified lunatics have been housed in the County Asylums, and also that the steady diminution in the number of applications for beds, commented upon last year, continued during 1910. The scheme for extending the accommodation for male private patients at Claybury Hill has been abandoned, but Horton Asylum and the Epileptic Colony are both being enlarged. Plans for the eleventh asylum are still in preparation, and a contract for the purchase of two properties at Denmark Hill for the erection of the Mental Hospital has been entered into, and is awaiting the approval of the Secretary of State. The land, four and a half acres in extent, will, it is said, provide a satisfactory site for the Mental Hospital of 100 beds. It is anticipated that the cost of the building and equipment will be about £40,000.

Medical Statistics.

On January 1st, 1910, there were 19,823 patients in London County Asylums (males, 8,501; females, 11,322), and on December 31st, 1910, there were 20,066 (males, 8,591; females, 11,475), giving an increase of patients in the County Asylums of 243. The total cases under treatment during the year numbered 23,550, and the average number daily resident 19,997.

During the year 1,770 males and 1,957 females, or 3,727 altogether, were admitted. Of the total admissions, 3,484 were direct and 243 indirect admissions.

In 1,332 the attacks were first attacks within three, and in 512 more within twelve months of admission; in 647 not-first attacks within twelve months, as also in 101 in whom it was not known whether the attacks were first attacks or not; in the remainder the attacks were either of more than twelve months' duration (316), or of unknown duration (205), or congenital cases (156). In their revised form the statistical tables only go back to 1907, so that comparison with former years is largely precluded; but it is encouraging to note that the first-attack cases have steadily declined from 2,502 in 1904 to 2,396 in 1910, and as the number of these cases must form the basis of statistics of "occurring" insanity, the figures for succeeding years will be awaited with interest. As to civil state, 1,656 were single, 1,622 married, and 435 widowed, whilst in 14 no information could be obtained. The average age of the admissions in the males was 42.39, and in the females 42.08 years. Considering only the first-attack direct admissions—from this point of view the important class—the numbers fall according to the age at commencement of attack, into the following age periods: 587 were under 30 years; 567 between 30 and 40; 503 between 40 and 50; 372 between 50 and 60; 249 between 60 and 70; and 79 were over 70 years of age. As compared with the previous three years there was a substantial decrease for both sexes of young cases and also of aged females.

Turning to the forms of mental disorder, the direct admissions were classified as follows: Mania, recent 479, chronic 59, recurrent 143; melancholia, recent

[1] Annual Report for 1910-11 of the Asylums Committee of the London County Council. To be purchased from or through P. S. King and Son, 2, Great Smith Street, Westminster, S.W. No. 1456. Price, 2s. 6d. Post free, 3s.

810, chronic 68, recurrent 173; senile and secondary dementia, 175; systematized delusional insanity, 151; non-systematized, 302; general paralysis of the insane, 314; confusional insanity, 231; insanity with epilepsy, 177; primary dementia, 81; insanity with grosser brain lesions, 66; stupor, 47; acute delirium, 14; volitional insanity, 11; congenital or infantile defect, 166, of whom 48 were epileptic; moral insanity, 4; and not insane, 5.

As to causation, out of the 3,479 direct admissions no etiological factors could be assigned in 380. Of the remaining 3,099, alcohol was assigned in 716, or 23.1 per cent., acquired syphilis in 341, congenital syphilis in 25, influenza in 50, tuberculosis in 39, and other toxins in 34; diseases of the nervous system in 318, including epilepsy 219; other bodily affections in 445, of which cardio-vascular degeneration (276) formed the chief; critical periods in 648, child-bearing in 123, physiological defects and errors in 220, bodily trauma in 128, and mental stress in no less than 960. An insane heredity was ascertained in 872, or 28.1 per cent., an alcoholic heredity in 319, an epileptic heredity in 113, a neurotic heredity in 33, and one of eccentricity in 16, giving a total and combined neuropathic heredity in 1,353. As in many of the individuals some of the above factors would be combined the total neuropathic heredity is not expressed here as a percentage. Mental instability was assigned also in 305, of which congenital mental defect not amounting to imbecility was returned in 247. Table B.9 gives particulars relating to direct admissions suffering from general paralysis of the insane, showing civil states, age at commencement of attack, and the number of cases with evidence of syphilis. Out of the 314 cases with general paralysis 175, or over 55 per cent., bore evidences of syphilitic infection. Of the total paralytics 215 were married.

Discharges, Deaths, Etc.

During the year 1,143 were discharged as recovered, giving a recovery-rate upon the direct admissions of 32.81 per cent. (average 37.24 per cent.), or of recoveries in and on the direct admissions of 31.11 per cent. Also 548 were discharged as relieved and 148 as not improved. Those discharged as not recovered, however, include transfers to other asylums, the actual discharges as relieved or not improved numbering 380. Of these latter 148 were discharged to friends, 204 were sent to Metropolitan Asylums Board asylums, 17 aliens were deported, and 4 were written off as escaped.

During the year also 1,645 died, giving a death-rate on the average numbers resident of 8.23 per cent. The principal causes of death were as follow: Diseases of the nervous system in 560, including 365 deaths from general paralysis; diseases of the heart in 199; diseases of blood vessels in 103; diseases of respiratory organs in 59; diseases of the urinary system in 53; diseases of the digestive system in 29; senile decay in 105; various less common diseases in 8; accident or violence in 11, and general diseases, including 212 from tuberculous diseases, in 512. Arranged in percentages of the total deaths the most notable causes of death were as follow (principal contributory causes aggregated): General paralysis of the insane, 22.43 per cent.; pneumonia, 18.96 per cent.; tuberculosis, 15.81 per cent.; valvular disease and endocarditis, 10.76 per cent.; fatty degeneration of heart, 7.53 per cent.; Bright's disease, 7.96 per cent.; and arterio-sclerosis 6.56 per cent. Deaths from tuberculosis still show a downward tendency, the percentage of the preceding year being 15.93 per cent., and that of the year 1908 17.53 per cent.

As showing the large number of patients who die in London County Asylums at an advanced age a table is given, from which we see that in 1910 no fewer than 303, or 18.42 per cent. of the total number who died, were between 60 and 70 years of age, and 230, or 13.98 per cent., over 70 years of age at death. As naturally coupling itself with the last, and as showing for a series of four years at any rate the consistent accumulation of long-standing and congenital cases, a table contained in the report should be mentioned. This table compares the length of the present attack of patients resident on the last day of the year in the years 1907, 1908, 1909, and 1910, arranged in periods of from less than twelve months up to over forty years. The table shows that in this period of four years the proportion of cases with a duration of less than five years fell from 37.7 to 33.5 per cent. in the case of males, and from 36.3 to 32.0 per cent. in the case of females; whereas the proportion of cases with a duration of over five years rose from 62.3 to 66.5 per cent. in the case of the males, and from 63.7 to 63.0 per cent. in the case of the females. Further evidence of this accumulation is to be found in the table showing the form of mental disorder in those remaining in the asylums on the last day of December, 1910. These were as follows: Senile and secondary dementia, 4,762; chronic mania and melancholia, 4,684; delusional insanity, 3,808; insanity with epilepsy, 1,537; general paralysis, 462; primary dementia, 426; insanity with gross brain lesions, 214; and congenital or infantile mental defect, 1,591. Out of the 20,066 patients remaining in the asylums on December 31st, 1910, there were thus 17,484 whose recovery, judged merely from the form of mental disorder, and omitting many cases who would eventually decline into unfavourable categories, could not be expected. As a matter of fact, the prospect of recovery was regarded as unfavourable in 18,500, as doubtful in 1,087, and as favourable in only 479, or 2.3 per cent. of the asylum inmates.

Cost.

The average net weekly cost per head for patients in London asylums during the year ended March 31st, 1911, was 10s. 2.65d. as compared with 10s. 0.34d. for the previous year.

Pathologist's Report.

The report of Dr. F. W. Mott, F.R.S., Pathologist to the London County Asylums, gives in outline an account of the very great amount of work carried on at Claybury by Dr. Mott and his assistants and co-workers. The work done at the laboratory falls under two heads: (*a*) Research work, and (*b*) routine examination of pathological material from the London County Asylums. Many of the results of research work will be found in the fifth volume of the *Archives of Neurology*, a deeply interesting and valuable collection, reviewed in our issue of December 23rd, 1911. Turning to the pathological work of the asylums, reports were furnished on 8 cases of cerebral tumour, swabs in cases of diphtheria, sputum, and urine. The Wassermann reaction was applied in 127 samples of cerebro-spinal fluid and serum, the results being found "to completely agree with the statements already published by reliable English and Continental observers." A considerable amount of work was done in connexion with typhoid fever, Widal tests being made in 158 blood serums, 80 specimens of faeces and 38 of urine also being examined. Under "Work in Progress" Dr. Mott epitomizes investigations made into heredity in its relations to insanity. One very important fact, Dr. Mott says, has been elucidated—namely, the "law of anticipation." This law, which is, perhaps, more fitly indicated by another term Dr. Mott applies to it—namely, "ante-dating"—consists of the fact that the insane offspring of insane parents tend to become insane at an earlier age than their parents. Thus, out of 2,246 relatives in London County Asylums, there were 420 pairs of parents and offspring, and in only one case did the attack in the offspring commence at a later age than that of the parent's illness. "Nature," Dr. Mott says, "by intensifying the mental disease, as it were, crystallizes out the unsound elements of an insane stock by developing the disease at an earlier age, thus preventing in a great measure the perpetuation of the taint. This fact explains why it is in pedigrees of insane stocks the insanity does not proceed as a rule beyond three generations." Problems in heredity are exceedingly complex, but there can be no question that this fact, if true, is exceedingly important.

Leaving this for Dr. Mott's report on pulmonary tuberculosis in the London County Asylums, it appears that the percentage-incidence of diagnosed tuberculous cases has remained about the same figure for the past four years, varying between 1.93 of the patients resident and 2.07, this latter figure being the last recorded, for the year ended March 31st, 1911. Dr. Mott's *post-mortem* statistics show that out of 1,555 autopsies the percentage in which active tuberculous lesions were found was 13.95.

Lastly, Dr. Mott's report on dysentery and diarrhoea in the London County Asylums up to the end of February, 1911, shows that there was a slight increase in the number of cases of dysentery as compared with the previous year,

and also in the number of diarrhoea cases. Compared with previous years, however, a general improvement in respect of both disorders was to be noted.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

THE WOMEN'S NATIONAL HEALTH ASSOCIATION AND THE INSURANCE ACT.

THE wisdom of the course which the Countess of Aberdeen, President of the Women's National Health Association of Ireland, has followed in utilizing the organization of that Association to set up an Irish National Insurance Society seems to be open to question, and has, in fact, been criticized in Ireland.

In taking this course, Her Excellency has acted under the advice of a committee, consisting of the Right Hon. Sir James B. Dougherty, the Right. Hon. T. W. Russell, M.P.; the Right. Hon. Sir Henry Robinson, Vice-President of the Local Government Board; the Earl of Carrick, Sir John Lynch, Mr. William M. Murphy, Mr. G. Dougherty, Barrister-at-Law, and Sir William J. Thompson, M.D., Registrar-General for Ireland (Hon. Treasurer). It appears that the committee unanimously adopted the following resolution:

> That we recommend that the Women's National Health Association should take steps to form an approved society under the Act provided that it is found upon inquiry through the various branches of the Association that a sufficient number of insured persons can be obtained to qualify as an independent society under Section 38, Subsection 1 of the bill as introduced into the House of Lords.

The scheme as originally announced was to the effect that the Women's National Health Association of Ireland should form a section competent to become an approved society under the Act, and recommended all its branches to organize meetings at which the provisions of the Act should be explained, and at which every effort should be made to recruit members for the new section of the Women's National Health Association when formed.

It will be observed that the members of the advisory committee were all connected with Dublin and comprised only one member of the medical profession who himself holds an official position. Had the committee contained representatives from the South, West, or North of Ireland who are not officials and a few doctors in close touch with the actual conditions of medical practice, it is probable that a different course would have been recommended. In many places the suggestion was favourably received, but co. Carlow, Tralee, Killarney, and Tanderagee, wish to postpone action; Queenstown does not wish to take action as a branch; Cork intends holding a conference with the representatives of other women's associations before coming to a decision. Belfast, Londonderry, Clonmel, Ballymahon, Innismagrath, and Waterford have decided definitely against taking part in the scheme on various grounds, but principally because they believe that to take part in carrying out the provisions of the Act would import politics into the work, because they deem that to take up insurance work is to go outside their legitimate sphere of action, or because they do not approve of the Act as it stands, and wish to see it amended before having anything to do with it.

At a public meeting, convened by the Provisional Committee of the Irish Health Insurance Society, under the auspices of the Women's National Health Association of Ireland, held in Dublin on January 17th, the Countess of Aberdeen explained the action the Women's National Health Association had taken in the matter, and said that a misunderstanding had arisen. It was not proposed that the branches should be invited to become approved societies, but that the new Irish Health Insurance Society should be a distinct society with its own officials, officers, and agents. No responsibility was to rest on the branches of the Women's National Health Association, and the only time they could really help was during the period before the Act came into force, probably next July, by spreading information and trying to obtain members, so as to make the new society a strong one, able to confer benefits on its members, and to help the Women's National Health Association to obtain adequate representation and influence on the new County Insurance Committees, which would have such great influence and power on public health administration. Her Excellency also protested strongly against the idea that the formation of an insurance section which could become an approved society brought the Women's National Health Association within the arena of politics.

We do not know how far Lady Aberdeen's explanation will satisfy medical opinion in Ireland, which, so far, does not seem to have found definite expression. No section of the community has given more enthusiastic help to the Women's National Health Association than the medical profession, and its members may well have hesitated to appear to put themselves in opposition to its distinguished President. But many of its members, probably the very large majority, hold the opinion that the Insurance Act will seriously injure them individually and the profession as a whole. Many of their relatives are serving on the executive committees of the various branches of the Women's National Health Association, and the action taken by the Executive of the Women's National Health Association, without consultation with the medical profession, placed them in a somewhat invidious position.

The scheme is now described as "The Irish Health Insurance Society (under the auspices of the Women's National Health Association)." Numerous meetings have been held and are being arranged all over Ireland to explain the working of the Act and to start branches of the new society. Lady Aberdeen has issued a circular, in the course of which she says:

> True to our non-political and non-sectarian basis, we are forming an independent insurance society, which will attach no label of any kind to those who insure with it. I must ask you to forgive me if I insist on this point.
>
> No one cherishes more than I do the fact that the Women's National Health Association has formed a platform on which persons of all sections, parties, and creeds can and do unite for the common welfare and health of the nation. I yield to no one in my determination to guard our Association against any taint of party politics, and I resent the imputation that anything of the sort is being imported now into our work.

We are sure that Lady Aberdeen is well advised in her determination to guard against any taint of party politics, and perfectly sincere in disclaiming any such taint. At the same time the medical profession cannot shut its eyes to the fact that the system of sending lecturers to local meetings, "at which the provisions of the Act shall be explained," adopted by the Women's National Health Association of Ireland, bears a very strong family likeness to that adopted in England by a frankly party political organization, the National Liberal Federation.

TRADES UNIONS AND THE NATIONAL INSURANCE ACT.

At a meeting of the Parliamentary Committee of the Irish Trades Union Congress, held in Dublin on January 12th, the following resolution was adopted:

> That this meeting expresses its dissatisfaction at the action of the Irish Party in insisting on the elimination of medical benefits, as we are at a loss to know on what public opinion they base this decision, and we request that a one clause bill be introduced immediately so as to remedy this grave defect; and that copies of this be sent to Messrs. Redmond, Dillon, and Devlin, the Chancellor of the Exchequer, and the Chief Secretary for Ireland.

OLD AGE PENSIONERS IN WORKHOUSES.

There have lately been complaints from various workhouses throughout the country that old age pensioners came into the workhouse infirmaries and refused to allow any of their pension money to be taken for their maintenance while in the hospital. At Trim it was stated that after staying in the house for a fortnight or three weeks they go out and draw the money that had been accumulating, and when the money was spent went back to the house again. A medical officer writes to describe a method by which he has got over this trouble. Every pensioner, when admitted to hospital, is asked if he is willing to pay the average cost and hand over his book. If he refused he was told that he would be transferred to the aged and infirm class, which can be done by the medical officer while retaining him for treatment in the hospital; but the effect of such transfer would be that he would be automatically deprived of his pension, and would have to apply for it again on his discharge.

Floods and Sickness.

Owing to the continuance of the heavy rainfall, the floods in the Midlands and West of Ireland are still on the increase. One curious result of these floods is that the water supply to the Fever Hospital of the Ballymahon Workhouse has been stopped. The water is supplied by a water wheel and force pump from a tributary of the Shannon, and owing to the excessive flooding this water wheel will not work. It has been decided to cart a supply of water to the Fever Hospital until the floods subside.

As mentioned last week, Sir Acheson MacCullagh, Medical Inspector of the Local Government Board, has been making inquiries into the cause of the outbreak of typhus fever in Listowel, and has announced that it is not due to the bad water supply, as suggested, but to the filthy state in which the town is left. It appears that there are no proper sanitary arrangements or scavengering, and that the inhabitants dump their refuse in the street, and manure, etc., is left to rot in the streets for months at a time.

Outbreak of Diphtheria in North Tipperary.

A serious outbreak of scarlatina and diphtheria has occurred in the Ballingarry district, about three miles from Borrisokane. From one family alone four children are in the fever hospital suffering from diphtheria and also a servant suffering from both diphtheria and scarlatina.

Vaccination Certificate.

A very curious position of affairs has arisen at Celbridge. Some time ago Dr. Knapp was appointed by the guardians to act as locumtenent for Dr. Hampton, medical officer of the Lucan Dispensary, for three weeks. The Local Government Board refused to sanction payment on the ground that it did not recognize his qualification in vaccination, as he had obtained a certificate not from one of the three instructors recognized by them. Up to a few years ago the Board recognized a certificate of instruction in vaccination given by any public vaccinator. The guardians, having employed Dr. Knapp, are liable for his salary, but if they pay this the Local Government Board have threatened to surcharge them with it. Dr. Knapp has put the matter in the hands of his solicitor, and at their last weekly meeting the Celbridge Guardians, recognizing that they would probably have to pay heavy costs if the case was brought to the courts, decided to make a further appeal to the Local Government Board to sanction the payment. It appears that Dr. Knapp did not vaccinate anybody during the time he acted as medical officer.

Donnybrook Dispensary.

The controversy that has been going on for some time between the medical officer and the compounder of the Donnybrook Dispensary, which was started by the latter altering the prescriptions of the medical officer without intimating the fact to him, has now been settled by the transference of Mr. Martin from Terenure to the Donnybrook and Irishtown Dispensary, and of Dr. McKenna to Terenure.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Association of School Medical Officers for Scotland.

A meeting of the Association of School Medical Officers for Scotland was held in the Station Hotel, Perth, on January 20th. Dr. Roberts (President of the Association) was in the chair. Twenty members were present, and new members were elected. A discussion on the control of infectious disease in schools was opened by Dr. McWhan, who detailed the scheme in operation in the County of Berwickshire. Dr. G. Halley Meikle outlined the procedure in the city of Edinburgh, and the discussion was continued by Drs. Gilmour, Findlater, Moffat, and G. Arbuckle Brown. The afternoon session was occupied by a discussion on the work of the school medical officer. It was opened by Dr. Gilmour, who laid special emphasis on the work of the school medical officer in relation to the cleansing of school children, the attendance of parents at inspections, and the instructions to teachers in regard to defective children. Drs. Roberts, Halley Meikle, Arbuckle Brown, Findlater, Moffat, McWhan, and Kidd took part in the discussion, when the necessity of different methods of procedure in each district (town or county) to meet the requirements of each locality was apparent. The election of office-bearers will take place at the annual meeting of the Association, to be held in Glasgow on March 30th.

Cremation.

The annual meeting of the Scottish Burial Reform and Cremation Society (Limited) was held at Glasgow on January 17th. Dr. Ebenezer Duncan presided, and among those present was Lord Provost Stevenson. The report of the directors stated that during the year 35 cremations had been carried out, compared with 26 in the previous year, making a total since the opening of the crematorium of 376. The new incinerating apparatus installed last year had proved satisfactory, and shown economy in fuel. The Chairman, in moving the adoption of the report, said that they were perfectly satisfied from observation that they had made a great advance in creating a public sentiment in favour of cremation. Large numbers had been converted from what he might call a feeling of dislike by attending the services at cremations in their chapel. Now that they had achieved the conquest of the sentiment of the educated and intelligent portions of the population, he had not the smallest doubt that they would also begin soon to see a change of sentiment so far as poorer citizens were concerned. The society was purely philanthropic. It did not exist for profit. If any profit was made it was expended on propaganda purposes, which were entirely in the public interest. One of the objections on the part of the poor was the expense. Well, they were willing to charge modified fees to relatives who were unable to make full payment, and in exceptional cases they were willing to consider the claims of relatives who could not make any payment. With regard to cremation in other parts of Scotland, he might say that within the last few years a very vigorous society had been formed in Edinburgh. While they favoured corporations taking up this matter and building crematoriums, the experience in England was that municipal crematoriums were not a very great success. Lord Provost Stevenson seconded, remarking that, although he would like as much weight as possible to be given to sentiment, he thought that the question of public policy ought to be paramount in dealing with the subject. The real object, practically speaking, in all civilized countries was the returning of earth to earth and ashes to ashes. If that was the object, surely the means to bring that about most quickly was the best. If he could do anything in the way of influencing the corporation in this matter he would do it gladly either in the way of co-operation or perhaps even of competition. Mr. J. D. Easson, secretary of the Edinburgh Cremation Society, supported the motion and referred to the progress of the Edinburgh Society. The motion was adopted.

Special Correspondence.

BERLIN.

The Outbreak of Poisoning at Municipal Night Shelters.

Again last week the meeting of the Berliner medicinische Gesellschaft was so crowded that the hall of the Langenbeck House proved too small, and many were unable to gain admittance. The subject of the evening was the report from the chief physicians of the Municipal Friedrichshain Hospital on the outbreak of disease among inmates of a Berlin night shelter. Dr. Stadelmann, Director of the Department for Internal Diseases, in a clinical report on the many cases he treated, stated that the disease had now been traced to methyl-alcohol, but the symptoms were almost identical with those of botulism. In some cases the severe symptoms did not show themselves until several days had elapsed—another similarity with botulism. In fact it was often difficult to keep the patients in hospital, unaccustomed as they were to any discipline. Dr. Pick, the pathological anatomist of the hospital, spoke of the conditions found *post mortem*,

especially in the eyes. Loss of sight was one of the most alarming symptoms of the worst cases, and Pick, making use of Nissl's colouring method, found that the ganglion cells of the retina had been attacked and that they had undergone changes that made sight impossible. In some cases the optic nerve had also been attacked. Dr. Fischer, the physician of the night shelter itself, gave an account of his experimental researches, which, far from clearing up the mystery of the attacks, seemed to make it still darker. Some of his rabbits grew inebriated, others died; one rabbit which had had an enormous quantity of methyl-alcohol injected (the analogous quantity for a human being would be several hundred cubic centimetres) remained perfectly healthy. Again, asked Fischer, how was it that only night-shelter inmates fell victims to the poison, when numbers of others took "schnapps" in the taprooms in question? Medical men had concocted a "cup" (*Bowle*) with methyl-alcohol, and took no harm from drinking it. Various researches of late years seemed to prove that pure methyl-alcohol was not poisonous. Some other substance must be present in order to produce the toxic action.

Correspondence.

ARTIFICIAL RESPIRATION OF THE APPARENTLY DROWNED.

SIR,—In regard to Professor Schäfer's letter, may I say that I do not question that his method of conducting artificial respiration is the most simple and effective? All I wish to suggest is that the subject should be rolled over from the prone to the supine position and the thorax compressed first in one posture and then in the other. The compression can be applied in either position in the same way—that is to say, the Schäfer method of compressing the thorax can be applied alternately in the supine and prone position. I believe this will relieve the over-distension of the right side of the heart. We know that the distended right heart of an asphyxiated animal will often give vigorous beats when emptied of blood. In such an animal the right heart can be emptied by gravity into the abdominal vessels by lifting up the head end and squeezing the thorax.

This is an easy method of producing the effect of venesection. I now and again carry out this proceeding while rhythmically compressing the thorax of animals collapsed by chloroform poisoning, and often with success.

I think it would give the right side of the heart a better chance of recovering, when at the point of paralytic distension, if the change to the supine and prone positions were frequently made. The head end should be placed a little higher than the feet end of the body, so as to let gravity come into play. The problem is not how to get the largest volume of air in and out of the lungs, but how to get the heart beating again by forcing some oxygenated blood through the coronary vessels and by relieving the distension of the right side of the heart. If directions were given to make a frequent change from prone to supine posture and back again it would not complicate the Schäfer method, and would, I venture to think, make this method even more surely the simplest and best.—I am, etc.,

London, E., January 23rd. LEONARD HILL.

NOTIFIABLE TUBERCULOSIS IN CHILDREN AND VON PIRQUET'S TEST.

SIR,—The question as to what is tuberculosis in children has always received a wide range of answers by different observers. Now that the disease is notifiable, there should surely be some sort of generally accepted standard upon which to judge. The finding of tubercle bacilli must be left out of count, as it rarely occurs; physical signs are so much more fleeting and uncertain than in adults that they alone seem insufficient; history and general symptoms are important; but when all factors are considered a large element of doubt often remains.

I have recently applied von Pirquet's test to the twenty children here in the hope of securing by its aid a reinforcement of judgement. The results were as follows:

	No.	Reacted to von Pirquet's Test.
Children with definite physical signs of phthisis	7	5
Children with doubtful signs (altered breathing or note but no crepitations)	8	4
Children with no signs	5	0

From this it would appear that at any rate there was some negative value in the test, as no reactions occurred in cases with no physical signs, but unfortunately tests with adults at the same time did not bear this out, as three healthy members of the staff reacted out of seven in whom it was tried.

As regards the seven undoubted cases of whom five reacted and two did not, one of the two was a child soaked in tubercle with large numbers of tubercle bacilli in her sputum; this child one would fully expect to fail, as the minute injection of tuberculin could scarcely make an impression where large quantities of her own tuberculin were constantly in the blood stream. But the other child who failed was certainly not more definitely tuberculous than the five who reacted, and among this group of five are children who are as much "soaked" in tubercle as the child who failed to respond.

So far, then, the test was not very convincing; it did better in the doubtful group, for whom its help was most desirable. Here, of eight cases four responded, and these four were certainly those in whom the history or signs had been most definite, although at the time of testing their chests had almost entirely cleared up. The other four we had always felt to be extremely doubtful, though sent on a definite diagnosis which had excluded them from school attendance.

The figures are too small to take percentages upon, but it would be interesting to know if other sanatorium officers or school inspectors who may have used the test have obtained more uniformly satisfactory results from it.—I am, etc.,

ESTHER CARLING,
Medical Superintendent, Maitland Sanatorium,
January 16th. Peppard Common, Oxon.

NON-TUBERCULOUS MILK IN GUERNSEY.

SIR,—The recent report of the Royal Commission upon Tuberculosis has called attention to the fact that a large proportion of the tuberculosis of children and young people is due to the consumption of milk from cows affected with this disease.

Until 1906 tuberculosis was apparently unknown amongst Guernsey cattle, but it was then introduced by cattle reimported after having been to England for exhibition.

This reimportation is now forbidden and drastic laws have been passed compelling the slaughter of all infected cattle, and granting State compensation. As a result the disease has been practically stamped out, and of the 1,364 animals exported during the past three years, all of which were treated with tuberculin, only six were found to be affected.

This gives tuberculosis a rate of under ½ per cent. compared with the estimate of Sir John McFadyean, Principal of the Royal Veterinary College, London, of 20 per cent. of adult cows in England.

The forms of human tuberculosis chiefly caused by bovine tuberculosis (tuberculous glands of neck, abdominal tuberculosis, and lupus) are consequently exceedingly rare in the island of Guernsey.

Channel Islands cows give the richest milk in the world, the average of fat for Guernsey cattle being over 60 per cent. above the English legal standard for fat. It is impossible to overrate the importance, especially where children and delicate persons are concerned, of milk so rich in butter fat, and above all so free from the germs of the scourge of tuberculosis.—I am, etc.,

HY. DRAPER BISHOP,
January 23rd. Medical Officer of Health, States of Guernsey.

THE ETIOLOGY OF LEPROSY.

SIR,—I have read with a great deal of interest the papers by Dr. Sandes, as well as Dr. Long, in your issue of September 2nd, 1911, in which these gentlemen give details of their simultaneous though independent discovery of an acid-fast bacillus identical with the *Bacillus leprae* in bed bugs fed on leper patients.

The possibility that leprosy might be propagated by insect bites had already occurred to many, but all attempts to find the bacillus in insects had failed with the possible exception of those carried out by Goodhue at Molokai. In 1906 he demonstrated an acid-fast bacillus similar to the *Bacillus leprae* in the bed bug (*Cimex lectuarius*) as well as the mosquito (*Culex pungens*).

There can be no doubt that the insect theory of transmission fits in admirably with many facts known about the disease, and helps to explain many hitherto obscure points. At the Trinidad Asylum, since its establishment over forty years ago, there has not been a single case of the disease recorded among the nursing Dominican Sisters on the attendant staff, including washerwomen. The wards of the asylum have always been kept scrupulously clean, and the Mother Superior informed me that such a thing as a bed bug is a *rara avis* in the institution. Two of the attendant chaplains to the institution have, however, contracted the disease. The chaplain's house is in the asylum grounds, though far away from the patients' wards.

The probable transmission of the disease by blood-sucking insects should not, however, make us close our eyes to other possible and perhaps not uncommon methods of infection. Of the various paths by which the bacillus might gain access to the human body, the nasal passages have hitherto been considered the most likely. Out of nearly 200 cases examined at the Trinidad Asylum, we succeeded in demonstrating the specific bacillus in the nasal secretion in all the 105 tubercular cases examined, but only in 9 out of 80 anaesthetic cases.

The two types of the disease are so essentially different, not only in their clinical manifestations, but also in their geographical distribution, that various theories have been brought forward to explain the cause of this difference. I venture to submit that it may be due to a different method of infection, the common path of contagion in tubercular leprosy being the nasal mucosa, while anaesthetic leprosy is propagated chiefly by means of blood-sucking insects.

In tubercular leprosy, from the primary lesion in the nose the bacilli are distributed by means of the lymphatics, causing a dense infiltration of the subcutaneous and submucous tissues. In anaesthetic leprosy, on the other hand, the bacilli are injected directly into the blood stream by means of blood-sucking insects. There they are liable to the attacks of the white blood cells, and are gradually destroyed by the leucocytes. The toxin liberated by their destruction is set free in the blood, finding its way eventually to the nervous system, which is particularly susceptible to the leprotic toxin. The few bacilli which escape the attack of the leucocytes would find their way to some of the internal organs. They would remain there in a latent or dormant state, ready at a favourable opportunity to make another irruption into the blood stream, thus causing a further advance in the clinical manifestations of the disease. We have striking analogies in the case of malaria and syphilis, when the germs of these diseases may remain quiescent for long periods and suddenly become active again.

According to this view the nervous lesion in leprosy would be more in the nature of a toxaemia than a direct action of the bacilli on the nervous tissue itself. It is true the specific bacillus has been found in the nerve sheaths; but it has only been detected in relatively small numbers even in cases in which there has been a general and widespread destruction of nervous tissue.

There are many facts in connexion with the disease in support of such a view. The specific bacillus is to be found in the nasal secretion in all cases of tubercular leprosy showing a constant implication of the nasal mucosa; on the other hand, it is commonly absent in cases of anaesthetic leprosy. The bacillus is rarely to be found in the blood, though present in myriads in the subcutaneous tissue and other organs of the body such as the liver and spleen. This proves that the blood probably exercises a destructive influence on the bacilli.

Anaesthetic leprosy is, on the whole, a much milder affection than tubercular leprosy, and often tends to spontaneous cure—that is, in the sense that fresh leprous infection ceases to occur; but the effects of the leprotic process is usually permanent, the trophic lesions from nervous destruction being irremediable.

Tubercular or nodular cases ultimately, and almost invariably if the disease has lasted any length of time, suffer from nervous manifestations. This can be easily explained by the occasional entry into the blood stream of bacilli, their destruction by the leucocytes, with the subsequent liberation of toxin directly into the blood stream.

Anaesthetic cases on the other hand rarely become tubercular unless, as is often the case, they remain for years in an asylum in constant contact with tubercular patients. In such cases there would be a secondary infection through the nasal passages. In support of this contention I may say that two of the nine anaesthetic cases in which I found the specific bacillus in the nasal secretion were already beginning to show signs of nodular infection, manifested by a slight thickening of the lobules of the ear.

There is a very practical result which would follow from such a theory if proved to be correct, namely, the advisability of separating anaesthetic patients from tubercular patients.

Anaesthetic leprosy is much commoner in the tropics than tubercular leprosy; the reverse is the case in temperate climates. Insect life is more abundant in the tropics than it is in colder latitudes, which would easily account for the greater percentage of anaesthetic cases in warm climates.

This suggestion is naturally mere speculation, but I submit that it helps to explain more satisfactorily than the various theories which have hitherto been advanced, the great difference between the two types of the disease.—I am, etc.,

FERNAND L. DE VERTEUIL, M.D.Edin.,
M.R.C.S.Eng., L.R.C.P.Lond., Surgeon, R.N.(Ret.),
Late Surgeon, Royal Naval Hospital, Plymouth.

Vancouver, B.C.

THE MEDICAL SECRETARYSHIP.

SIR,—Mr. Andrew Clark did not read my letter carefully—I agree with him that "there are three equally important offices" in the Association; but my words were, "From the professional point of view the two most important offices" are the editorship and the medical secretaryship. Had I thought that, so written, this could be read as a slight upon the "Business Secretary," I would have asked you to print the word *professional* in italics. But as I have been misunderstood, will you let me say that whilst I was Chairman of Council I was fully satisfied with the way in which the business side of the work of the Association was carried on by the Manager and his willing staff?

Without traversing my remarks about the dictatorship of a former Editor, Mr. Clark says that "during that period the Association advanced in numbers and wealth," and that the Association "has accumulated a reserve of over £106,000." Again, I declare that my remarks were from the *professional* point of view. I did not say whether such a dictatorship might be good or bad for the financial side of the *Association*, but I did imply that such a state of things is bad for the *profession*. I make the distinction because it ought to be understood that the Association is not the Profession; but that the Profession is the proprietor of the Association; and that if the Association did not loyally serve the Profession it would either have to reform itself or to vanish into thin air—notwithstanding the fact that it "now has a reserve of £106,000." Without the approval of the Profession the Association could have no separate life.

With regard to Dr. Brierley's complaint about the "vast sums" spent over the literary output from the office of the Medical Secretaryship, I must confess that during my membership of the Council I also found it extravagant in its bulk, vexatious, and overwhelming. And of late, I take it, this department has been working at even greater pressure (though in one respect, at least, with questionable advantage to the medical profession). I would, therefore, suggest that the staff of that office be now granted a rest

of six months, and that during this time the Council quietly consider if there is actual need for making a new appointment. Of this, at any rate, I am convinced, that there should be no hurry in the matter.—I am, etc.,

London, W., Jan. 22nd. EDMUND OWEN.

SIR,—As a general practitioner, I sincerely hope that the choice of a Secretary will fall on a man who is and has been in active general practice. It would be somewhat unfair if a consultant were chosen, as he would be out of immediate touch with our requirements. Surely a practitioner could be found who would single-heartedly and ably devote himself to our interests.—I am, etc.,

Harrogate, Jan. 19th. J. W. MALIM.

SIR JAMES BARR AND THE INSURANCE ACT.

SIR,—In his letter in the JOURNAL of January 13th Sir James Barr says:

That my opposition to the Act is due to political bias is absolutely false, and Dr. Hislop should have sufficient intelligence to know that his statement is false.

My letter is there for any one to see and to judge whether I ever made such a statement. Sir James Barr vehemently refutes a statement never made by me, but set up by his own imagination. Whether I have sufficient intelligence to know it to be false I am not going to tell him.

If further proof were needed of what in my letter in the JOURNAL of January 6th I called "a most unfortunate circumstance for the profession," it is surely supplied with a liberal hand by Sir James Barr in his letter of January 8th.—I am, etc.,

Wrexham, Jan. 17th. JOHN J. HISLOP.

SIR,—In the JOURNAL of January 20th Dr. Frederick Porter states: "With Sir James Barr I agree, and believe, that this Act forcibly demonstrates the fact that this country has followed Germany in the path of degeneracy." Is Germany degenerating and is the passing of a National Insurance Act one of the stigmata of national degeneration? I would like to make a few brief quotations from Dr. Arthur Shadwell's book on *Industrial Efficiency*, which, I think, completely answers these questions in the negative. Dr. Shadwell's opinions are entitled to every respect, for they are the result of prolonged and original study and investigation, and he is himself a medical man. He says:

Chap. IX. No one can doubt that the general wellbeing of the working classes in Germany, which is strikingly visible to the eye and confirmed by vital statistics, in spite of many unfavourable circumstances, is in a large measure due to the insurance system.

With regard to the efficiency of labour, insurance has developed a very remarkable and unforeseen result. The prospect of having a great and increasing number of chronic invalids on their hands has stimulated the insurance offices and societies to a great preventive effort.

Chap. XV. Hence the State Insurance and the Poor Law outdoor relief, which must be taken together. They are largely responsible for the absence of misery and squalor in the mass, which strikes every observer as compared with England and the United States.

Chap. XV. It is seen not only in the scientific tariff, but in the careful and judicious factory code, the State system of insurance, the organization of traffic and transport by railway and canal, the fostering of the mercantile marine, the educational provision, municipal action, and Poor Law administration. So the edifice has been built up four-square and buttressed about on every side. It is a wonderful achievement in which every unit has played a part, and the spirit which has brought it about is the spirit of duty and work. Here a comparatively poor country, labouring under considerable natural disabilities, has raised itself to the very front rank of industrial productivity, and that its poorer classes, though less favoured by circumstances, yet maintain a higher level of wellbeing, and a far *higher level of vitality* than its wealthier rivals.

The German Act had been in operation nearly a quarter of a century when these opinions were given by this accomplished medical investigator. The Act dates from 1883, and was urged on the Reichstag by those ardent Socialists—Kaiser Wilhelm I and Bismarck.—I am, etc.,

Warrington, Jan. 21st. J. S. MANSON.

THE NEW CELL PROLIFERANT.

SIR,—Referring to the statement of Sir Ronald Ross in last week's issue, the investigations recorded in my paper entitled "A New Cell Proliferant," had no connexion whatever with the work of Mr. H. C. Ross.—I am, etc.,

Liverpool, Jan. 22nd. CHARLES J. MACALISTER.

SWEETS IN CHILDHOOD.

SIR,—Dr. Letheby Tidy writes (p. 161):

The difficulty is to find a correct and yet practical method of finishing a meal. An apple is ideal; but fruit cannot always be forthcoming, and, apart from it, nearly every meal terminates with carbohydrates in accordance with the dictates of appetite, and will undoubtedly continue to do so.

This seems to me to be an admission of a most important though hitherto overlooked principle in dietetics, followed by a douche of cold water. If an apple or fresh fruit is an ideal termination for a meal, why should not the medical profession at least recommend it? Although "nearly every meal terminates with carbohydrates in accordance with the dictates of appetite," equally true is it that dessert or fresh fruit follows sweets in a well ordered repast. And give children the chance of finishing with fruit, unless it is for some special reason contra-indicated, and it will be found that they will be pleased to do so; this at least has been my experience.

It is now some ten years since I commenced to teach my patients that carbohydrates such as bread and marmalade or jam, cake, biscuits, sweets, and the cooked carbohydrates which are usually given to children, tend to leave the mouth in an unhygienic state and to decay the teeth, and the majority, acting on the advice given, more or less regularly themselves take and give their children apples or fresh fruit of some kind with which to finish their meals. It is far easier to get children to finish their meals habitually with a little fresh fruit than it is to get them to make even a pretence of brushing their teeth. Although in the past nearly all children's meals finished with cooked carbohydrate food, there are already indications that such terminations are not quite so general as they formerly were. Certainly, in the families of several dentists, I know that apples or other fresh fruit are habitually on the table. The import of fresh fruits is rising rapidly, and the talk about apples or fresh fruit being relatively innutritious and indigestible is giving place to considerations with regard to the hygiene of the mouth and alimentary canal.

It seems to me that if the medical profession would advocate this ideal termination the day would not be far distant when those who could afford sweets would also see that it was to their welfare to afford fresh fruit to follow the sweets. As regards those who cannot afford fruit, neither can they afford sweets, for the very poor live largely on bread, and this already contains an excess of carbohydrate. What they will always want more than sugar is fat and protein to make up for the deficiency of these in bread. Sugar has been called a "protein sparer," but it would be a disastrous policy for a poor mother to give her children sweets instead of bread if there was already a deficiency of protein in the diet.—I am, etc.,

London, W., Jan. 20th. J. SIM WALLACE.

SIR,—Valuable help is afforded, in regard to what food is good for man, by a knowledge of his past dietetic career. I might cite many instances in proof of this. I will confine myself to two.

1. Until quite recent times—recent from the standpoint of evolution—man consumed no other milk than his mother's. Conclusion: Milk is not an essential article of food for him after the nursing period.

2. Before the agricultural period, which began but as yesterday, the only available sugar (in the pure form) was the precarious supply yielded by wild honey. Conclusion: Sugar (in the pure form) is not a necessary article of diet for man.

I am not arguing from these conclusions that milk and sugar should be excluded from man's dietary. Properly administered they doubtless constitute useful foods. It is probable, however (I say this with due deliberation), that on the whole British children get more harm than good both from milk (except in the case of nurslings) and sugar.

In regard to the question of sweets in childhood, I share Dr. Sim Wallace's views entirely. It would be difficult to

exaggerate the importance of his work in showing the connexion between faulty dietetics and dental disease. I estimate that among the inhabitants of these islands there are upwards of 200 million carious teeth, and as many alveolar abscesses. By following the simple rules laid down by Dr. Wallace both these diseases can be almost entirely prevented.—I am, etc.,

London, W., Jan. 20th. HARRY CAMPBELL.

THE STUDY OF CONDUCT.

SIR,—In your very kind and even too eulogistic notice of my book on *Conduct*, there is nevertheless one accusation that I can rebut. Commenting on my statement that "the psychiatric physician, whose function it is to treat disorders of conduct, not only makes no systematic study of conduct, but denies that such a study is desirable, even if he admits that such a study is feasible," your reviewer says that I am not correctly interpreting the attitude of most psychiatric physicians. I have the best reason to know that I do interpret their attitude correctly. The Medico-Psychological Association includes practically every psychiatric physician in the United Kingdom; and when I proposed, in the Education Committee of that Association, with all the authority of chairman, that the study of conduct is both feasible and desirable, I had not one single supporter. I did not even secure a seconder *pro forma*, so that the matter could be discussed. My proposal was laughed out of court. When I subsequently brought the matter before the whole Association, I was no more successful. Your reviewer may have knowledge, which I have not, that some of my colleagues are now converted, and that my statement is no longer true. I trust he has. But at the time it was written it was punctually correct. I am glad to say that the College of Physicians has made conduct a subject in the new examination in mental diseases.—I am, etc.,

London, W, Jan. 22nd. CHAS. MERCIER.

"TEMPERAMENT IN SPORT."

SIR,—Dr. Claye Shaw's article in *Bailey's Magazine of Sports and Pastimes* is most interesting and to the point. I have always understood that the Duke of Wellington, in his saying concerning the playing fields of Eton, meant to convey the idea that his early training in sport had taught him to keep cool and to be capable of exercising his best judgement on critical occasions. We have an excellent example of the effect of this kind of training in the case of Mr. Douglas, who is at present captaining our team of cricketers in Australia. In spite of frequent barrackings, etc., from the crowds, we read that this gentleman quietly goes on playing his game, which so far has proved to be a wonderfully successful one for his own side.—I am, etc.,

Blackpool, Jan. 22nd. HENRY THOS. BARTON.

TORTICOLLIS IN ACUTE RHEUMATISM.

SIR,—Professor Saundby will find torticollis as a complication of acute articular rheumatism mentioned on page 58 of vol. viii of Brouardel et Gilbert's textbook of medicine (edition 1908). This torticollis is symptomatic of a rheumatic cervical arthritis, which often passes unnoticed. It is almost always unilateral.

An interesting paper on the subject by the late Professor Lannelongue, entitled "Rhumatisme des articulations vertébrales du cou et torticollis" will be found in the *Bulletin Médical* for 1895, page 791.—I am, etc.,

Manchester, Jan. 21st. HAROLD E. KITCHEN.

STATE SICKNESS INSURANCE IN GERMANY.

SIR,—In the JOURNAL of January 20th, p. 159, it is suggested by Dr. Vines that I might explain an apparent discrepancy which occurs between my statement that "the effect of the insurance system on recruiting for the profession has been *nil*" in Germany, and the fact that the increase in numbers in the years 1910–11 was only 0.7 per cent. It would take a long article to do full justice to the matter, but, shortly, the reasons for the small increase are:

1. The increasing and more easily gained facilities for earning a larger income in a commercial career as compared with a professional; German commerce has made gigantic strides during the past twenty years.

2. The increasing severity and length—at least seven and a half years—of the medical curriculum in Germany.

3. The fact that a medical man in a military nation does not enjoy the prestige and social position that, from the point of view of culture, should rightly be his.

A quotation will make my points clearer:

> One result of the educational and legal restrictions which surround the medical profession is that a very high standard of ability is preserved all round, and another is that the profession is much closer than in England *and its members not so numerous in proportion to population.—Germany at Home*, by W. H. Dawson, page 27.

—I am, etc.,

Sale, Jan. 23rd. C. ADOLPHE K. RENSHAW, M.A.Cantab.

ADDITIONAL REPRESENTATIVES: A CONSTITUTIONAL QUESTION.

SIR,—The Council has agreed to call a Special Representative Meeting on or about February 21st, and with regard to the personnel of this meeting there is a very important point that requires to be cleared up.

By By-law 31 certain Divisions are entitled to more than one Representative. By By-law 32 these Divisions are clearly entitled to elect their Representatives now at any meeting. The point I wish to raise and have cleared up is this: Are the newly-elected Representatives entitled to sit at the Special Representative Meeting in February?

If they are not so entitled by strict legal phraseology, it seems to me that any objection that might be raised should be waived, so that they may take part in the meeting. This procedure would, I feel sure, best serve the interests of the Association.—I am, etc.,

London, W., Jan. 23rd. FRED. J. SMITH.

⁂ Dr. Smith's letter was submitted to the Chairman of the Organization Committee, who referred it to the Solicitor to the Association with a request for an interpretation of the regulations on this point. The following is Mr. Hempson's opinion:

OPINION.

With reference to the point raised in the letter of Dr. Fred. J. Smith, sent for publication in the current issue of the JOURNAL, which has been submitted to me, the position is, under the Articles and By-laws, as follows:

The "Representative Body" is created under Article 29, which provides that it shall be

> Composed of members of the Association elected by the Divisions in the manner prescribed by the By-laws, and of the members of the Council for the time being in office, or elected to take office.

Under Article 30 (2) it is provided as follows:

> No member of the Association who is not a member of the Representative Body shall be entitled to take part in any Representative Meeting.

By-law 32 (1) provides that:

> Every Representative shall be elected not more than nine months nor less than four weeks before the Annual Representative Meeting at which he takes office.

By-law 33 provides that:

> Every Representative of a constituency shall come into office at the commencement of the Annual Representative Meeting next succeeding the date of his election, and shall continue in office until the commencement of the Annual Representative Meeting of the following year.

By-law 34 provides for substitutes for Representatives attending Representative Meetings in order to prevent any constituency being unrepresented at a Representative Meeting.

Under these provisions I am of opinion that a Representative duly elected prior to an Annual Representative Meeting does not come into office until the first day of such Annual Representative Meeting, and that he continues in office, as Representative of the constituency by which he is elected, until the commencement of the next Annual Representative Meeting to be held in the following year.

It follows therefore that a Representative elected under the provisions of By-law 32 does not legally and constitutionally come into being as a Member of the Representative Body until the commencement of the Annual Representative Meeting next succeeding his election, nor is he, by virtue of Article 30 (2), permitted to take part in any Representative Meeting until that date occurs.

W. E. HEMPSON.

33, Henrietta Street, Strand, W.C.,
25th January, 1912.

Obituary.

DAVID CHRISTISON, M.D., F.R.C.P.E., LL.D., EDINBURGH.

DR. DAVID CHRISTISON died on January 21st, at his home in Edinburgh, at the age of 82. He was the second son of the famous Sir Robert Christison who was Professor of Medical Jurisprudence in the University of Edinburgh from 1822 to 1832, and from 1832 to 1877 Professor of Materia Medica.

David Christison was born in 1828, and was educated at the Edinburgh Academy and afterwards at Edinburgh University, where he graduated M.D. in 1851. He went out as Assistant Physician to the Renkioi Hospital at the Dardanelles at the time of the Crimean war, but unfortunately became ill there, and this was practically the end of his purely medical career. Henceforth he devoted himself to archaeology, in which subject he was a pioneer worker. When in 1906 the University of Edinburgh conferred upon him the honorary degree of LL.D., the Dean of the Faculty of Law (Sir Ludovic Grant) said:

> He is invited here to day as one of the pioneers and foremost representatives of scientific archaeology in Scotland. It would be difficult to exaggerate the importance of his administrative services as Secretary of the Society of Antiquaries; but by the community at large Dr. Christison is chiefly known for invaluable work achieved in the field with measuring rod and spade, and more particularly for his laborious and minute survey of the ancient moats, camps, and forts with which the map of Scotland is so thickly studded. The great work which records the results of these last-named researches, conceived in a truly scientific spirit and characterized by cautious avoidance of premature speculation, has completely dissipated the dreams of some of our latter-day Jonathan Oldbucks. I cannot refrain from adding that for some time past Dr. Christison, following up researches originated by his father in the girth-increase of trees, has been achieving results which promise to be scarcely less important for forestry than his antiquarian labours have been for archaeology.

From 1888 to 1904 he was Secretary of the Society of Antiquaries of Scotland, and contributed many important papers to its *Transactions*. Some twenty years ago he was Rhind Lecturer, his subject being The Prehistoric Forts of Scotland. The *Early Fortifications in Scotland* was the title of another extremely interesting book. In 1885, along with his brother, Sir Alexander, he published in two volumes the life of their father, Sir Robert Christison, who died on January 27th, 1882, at the age of 85.

After a visit to the Argentine for health reasons he wrote a number of interesting papers. He was a member of the Botanical Society, to which he made many communications. He gave much time and study to the growth of trees, a subject in which his father, Sir Robert Christison, was deeply interested, and on which he had written several papers.

For some years Dr. Christison's health had been failing. He was a charming and most interesting man. He leaves a widow, one son, and three daughters.

DR. CHARLES ALFRED LEE, the oldest medical practitioner of Hull, who died on January 13th, at the age of 86, was a member of an old Hull family. He was admitted a Member of the Royal College of Surgeons of England in 1848, and in 1858 became a Licentiate and Fellow of the College of Physicians and Surgeons of Glasgow. In 1859 he obtained the degree of M.D. at King's College, Aberdeen. In him the Hull Royal Infirmary has lost a generous supporter. One of the wards bears his name. He was a man of retiring disposition, and in a literal sense he did good by stealth and blushed to find it fame. He went out in all weathers, and never retired from active service; during last summer he was attending his patients. In his younger days he thoroughly enjoyed fox-hunting and yachting; angling was also one of his pastimes. He was all his life a great lover of horses. Dr. Lee, who was a bachelor and had no relatives, has left £150,000 to the city of Hull for the erection of almshouses, in addition to £5,000 in charitable bequests, mostly for the benefit of local institutions. Part of his wealth was inherited; the rest was the fruit of hard work. During his lifetime he had given liberally to charities. He was buried on January 17th, the Rev. T. Heany, Vicar of St. Stephen's, officiating. Mr. Heany, who was one of Dr. Lee's oldest friends, paid a tribute to his memory. He was a good physician, a kind friend, and with all the praise he had he was unspoiled. He was unwilling to hear praise of himself. Having referred to Dr. Lee's love of pictures, Mr. Heany said he might have chosen to give pictures to the city, but he chose rather to carry out the deep-laid sympathy of his nature, and that was that wherever the orphan or the widow were to be found, for them his heart went out.

DR. EDMUND DOWNES, who recently died at Eastbourne in his 69th year, was the son of the Rev. John Downes, of Hannington Rectory, Northampton. For ten years he was at Radley College, and went from there to Woolwich, subsequently being commissioned as a lieutenant in the Royal Horse Artillery. He served in India for about eight years, and then took up missionary work as a layman, his duties for the most part being confined to the frontier. Owing to failure of health he returned to England, and studied medicine at St. Mary's Hospital, being admitted M.R.C.S. and L.R.C.P.Lond. in 1876. He took the degree M.D.Brussels in 1876, and became F.R.C.S.Ed. in 1884. In 1877 he returned to India, where he worked as a medical missionary at Kashmir, but again his health necessitated his returning to England. He settled in practice at Eastbourne in 1884, where he was for some time in partnership with Dr. Harper. Dr. Downes was a warm supporter of philanthropic and religious work, and was for many years President of the local branch of the Y.M.C.A. From 1889 to 1909 he was President of the Eastbourne Swimming Club, and on his retirement he was presented with a handsome illuminated address from the members. Dr. Downes formerly held a commission in the Army Medical Reserve, and in 1896 was nominated surgeon-captain in the local Church Lads' Brigade.

DR. JOHN SHIVES, of Shipley, Yorks, a well-known practitioner in the Bradford district, passed away on January 5th, in his 67th year, at his residence, Arnage, Shipley, after an illness lasting many months, the cause of death being disease of the myocardium, probably dating from acute rheumatism in the Seventies, and ending ultimately in hydrothorax. Dr. Shives was a native of Ellon, Aberdeenshire, and was educated at Aberdeen University. He obtained the diplomas of L.R.C.P. and L.M.Edin. in 1868, and at the University of Aberdeen took the degrees of M.B., C.M. in 1869, and M.D. in 1876. His chief life's work was done at Liversedge, where for many years he conducted a large general practice, and was elected an Honorary Surgeon to the Dewsbury Infirmary. His services were greatly valued in the neighbourhood both in public appointments and among private patients. On leaving for London in 1894 he was the recipient of valuable farewell presents from both patients and personal friends. When in London he became a barrister-at-law (Middle Temple). After travelling in the United States he returned to Yorkshire and settled in Shipley. The interest he took in his profession was deep, and he kept it up to the last; but it was among those that knew him intimately and socially that he shone. There was a geniality, a shrewdness, and a kindliness that bound him to these, and the memory now makes his death a wellnigh irreparable loss to them. He lies among his own kith and kin at Allenvale Cemetery, Aberdeen.

WE have to record with regret the death, on January 17th, at his residence at Faversham, of Mr. CHARLES DUDLEY GARRETT, M.R.C.S., L.R.C.P. Mr. Garrett had been in indifferent health for some years, but his death at the early age of 45 was somewhat unexpected, and has caused great regret in the neighbourhood. He was a son of Mr. Charles William Garrett, of Nortoft, Northampton, and received his medical education at Westminster Hospital, where he distinguished himself in materia medica and practical chemistry; he also acted as prosector for the anatomical examinations of the Conjoint Board in England. He obtained the diplomas of M.R.C.S., L.R.C.P. in 1894, and settled in practice at Dewsbury; while there he was Police Surgeon, and also gave attention to the subject of anthrax among rag-sorters, pointing out the manner in which the infection was contracted in the mills. In 1906 the

condition of his health determined him to leave Dewsbury, and he settled at Faversham. Dr. Garrett had for thirty years taken a great interest in ambulance work, and from 1902 to 1906 was Honorary Surgeon and Superintendent of the Dewsbury Division of the St. John Ambulance Brigade, and was one of the examining officers for Yorkshire. In 1900 he was made an honorary life member of the St. John Ambulance Association in recognition of his able and valuable services as lecturer. After settling at Faversham he became Honorary Surgeon and Superintendent of the local ambulance brigade, and later on was appointed Commandant of the Voluntary Aid Detachment. He possessed the long-service medal, and was an Honorary Serving Brother of the Order of St. John of Jerusalem. He was Surgeon to the Faversham Cottage Hospital, and a member of the British Medical Association, and of the Leeds and West Riding Medico-Chirurgical Society. The funeral took place on January 20th, the first portion of the service being held in the parish church. The coffin was carried by members of the Faversham Division of the St. John Ambulance Brigade, and the funeral was attended by representatives of the Faversham, Boughton, and Doddington Brigades. There was a large attendance at the funeral, including many members of the medical profession.

The Services.

INDIAN MEDICAL SERVICE.

Reduced Railway Fares.

Some time ago a correspondent in India called our attention to a paragraph which had appeared in the *Civil and Military Gazette*, stating that the Government of India had ruled that the concession under Form "E" certificate to regimental captains and subalterns, notified in India Army Order No. 162, 1911, did not apply to officers of the Royal Army Medical Corps or the Indian Medical Service, even though the latter are actually posted to regiments. Form "E" is one used by military officers in India when travelling *on duty* by rail. On it they obtain first class tickets at second class rates for cash payments, recovering the amount of one and a half first class fares by travelling allowance bill.

In April last regimental captains and lieutenants were authorized to avail themselves of Form "E" when travelling at their own expense (*not on duty*) on State railways. It thus comes about that any regimental captain or subaltern, when not on duty, or when going on leave at any time, can use Form "E," and can travel first class for second class fares on State railways, whereas the medical officer of the same regiment, when a captain or lieutenant, has to pay the full fare. The matter was brought to the notice of the India Office by the Chairman of the Naval and Military Committee of the British Medical Association, and the question was, we understand, referred to the Government of India. A notification has now been received from the India Office to the effect that the suggestion that the extension of the travelling concession to captains and subalterns of the Indian Medical Service has been considered by the Government of India, but that it is not prepared to move in the matter at present. It may be pointed out that this refusal to treat Indian Medical Service officers on the same basis as their fellow regimental officers of the same rank applies also to the officers of the Royal Army Medical Corps; it is one of the discriminations to the disadvantage of medical officers shown by the Government of India, and we hope that the decision may be reconsidered. We are in a position to state that the matter will not be lost sight of.

We understand, though it is not a matter which concerns us, that the senior regimental officers, the lieutenant-colonels, and majors are also discontented with the order in question. For the sight may be seen of the senior officers travelling second class at their own expense, when not on duty, while the junior officers can enjoy the luxury of first class at the same cost to their pockets. Truly, "boons" in India have curious results.

FIRST SOUTH MIDLAND FIELD AMBULANCE.

Lieutenant-Colonel C. Howkins presided on January 20th at the annual dinner of the 1st South Midland Field Ambulance, held at the Great Western Hotel, Birmingham. Supporting him were Captain W. McCall, Captain W. Sturrock, Captain G. H. Dawes, Lieutenant Boeddicker, and Lieutenant W. H. Kimpton, officers of the Ambulance. Among the guests were Colonel W. O. Whitcombe, Colonel W. R. Ludlow, Lieutenant-Colonel J. F. Lister, Major W. H. Stephen, Major Robertson, Major Kaufmann, and Major C. Crosskey.

Lieutenant-Colonel Lister, in proposing the toast of "The Ambulance," expressed his pleasure that the Royal Army Medical Corps were at last to go to Great Brook Street to share the quarters with the Electrical Engineers. With such excellent head quarters the 1st Field Ambulance would have no difficulty in maintaining their full strength.

Lieutenant-Colonel Howkins, in responding, said that the Great Brook Street Barracks should prove most excellent head quarters. The barracks contained a riding school, and arrangements were in hand to purchase horses for the use of the ambulance. A large drill hall would be very shortly erected, and every effort made to render the place attractive. Colonel Howkins also said that it was hoped that in the near future a full military band would be formed, and this, he was sure, would prove a great inducement for men to join the Royal Army Medical Corps (Territorial). He also stated that he hoped the men whose engagements expired soon would re-engage, particularly the non-commissioned officers, and that all ranks would do their best to keep the unit up to the high standard of efficiency and establishment it now had.

Lieutenant W. H. Kimpton proposed the toast of "The Visitors" in a humorous speech, to which Colonel W. R. Ludlow responded.

LAWS AND CUSTOMS AS TO SICK AND WOUNDED.

Territorial Medical Officer would be glad to know which books to read to enable him to study "The Laws and Customs of War on Land so far as they relate to the Sick and Wounded," this being one of the subjects for examination of Majors before promotion to Lieutenant-Colonel. The Territorial Regulations, 1910, recommend *Manual of Military Law*, chapter xiv; but this is quite insufficient to answer the questions set at the examination held in December, 1911.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

The following degrees have been conferred:

M.B., B.C.—G. V. Fiddison.
M.B.—W. M. Penny, W. B. Wood.
B.C.—L. A. P. Anderson, G. G. Johnstone, A. C. Jepson, J. C. Markton, R. L. Rawlinson, H. B. G. Russell.

UNIVERSITY OF LONDON.

University College.

Preliminary Science Classes.

The introductory course in chemistry, physics, and biology for medical students held at University College will begin on Friday, March 1st, instead of, as hitherto, at the beginning of the third term in May. Full particulars may be obtained from the Secretary of University College.

LONDON SCHOOL OF TROPICAL MEDICINE.

Up to January 19th, 63 students have entered for the present session (January–April). The entries are classified as follows: For the general course, 50; for advanced course in entomology, helminthology, and protozoology, 13.

CONJOINT BOARD IN ENGLAND.

At the examination (*Part IV, Practical Pharmacy*) held in January the following candidates were approved by the examiners:

First Examination.—G. W. M. Andrew, L. D. Cohen, A. B. Danby, W. E. S. Digby, G. E. Dyas, W. K. Fry, N. Grellier, H. J. Hoby, J. E. T. Jones, A. W. Matthew, E. J. Nangle, L. R. Pickett, A. S. Plant, F. P. Pocock, P. Roux, A. H. Samy, A. S. Seabrooke, P. Ward, C. A. Webster, C. A. Weller, S. Wickenden.

SOCIETY OF APOTHECARIES OF LONDON.

At the examination held in January the following candidates were approved:

Surgery.—H. St. C. Colson (Sections I and II), J. F. O'Connell (Sections I and II), F. C. Shone (Sections I and II), W. H. Vincent (Section I and II).
Medicine.—H. St. C. Colson (Sections I and II), E. B. Keen (Section I), J. F. O'Connell (Sections I and II), C. B. Welsby (Section I).
Forensic Medicine.—H. St. C. Colson, R. J. M. E. Le Dentu, J. F. O'Connell, H. Willis.
Midwifery.—H. St. C. Colson, M. P. Dos Santos, J. F. O'Connell, C. G. Waddington, H. Willis.

Diploma.

The diploma of the society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:

H. St. C. Colson, J. F. O'Connell, F. C Shone, W. H. Vincent.

Dr. Mary Strangman, Honorary Physician to the Maternity Hospital and Burshall Asylum, Waterford, was elected a member of the Waterford Corporation at the annual municipal elections. Dr. Strangman is the first woman to become a member of the Corporation.

The London All-Indian Moslem League has collected, mainly among the Moslems of India, a sum of nearly £2,400 for the British Red Crescent Society. It is about to send from London, via Marseilles, a Red Crescent Corps, consisting of two doctors, a dresser, a dispenser, and two male nurses, with equipment and stores for a small field hospital, for the relief of sick and wounded Ottoman combatants in Tripoli.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

PROFESSIONAL SECRECY.

DEVANHA.—(1) The duty of a medical examiner is usually and properly limited to giving an opinion as to fitness or otherwise, and it would be a breach of professional secrecy if he were to reveal to a lay committee such prejudical facts as those alluded to; he should note them in his private case-book, but not include them in the report. (2) Whether he should appear in a cinematographic film to be exhibited to the British public presumably in lectures forming part of the campaign against tuberculosis is not of much importance. If he objects he will doubtless not be pressed, or he can stand so that his face is mainly hidden, or he can be represented by a lay understudy.

Public Health AND POOR LAW MEDICAL SERVICES.

VITAL STATISTICS IN ENGLAND AND WALES (1911).

WE are indebted to the Registrar-General for the following statement showing the birth- and death-rates and the rate of infantile mortality in England and Wales, and in certain parts of the country during the year 1911. During the past year aggregate death-rates from the principal epidemic diseases have not been calculated; they are not, therefore, included in the table. On the other hand, figures relating to London have been inserted in the table.

ENGLAND AND WALES.

Birth-rates and Death-rates in the Year 1911 (Provisional Figures).

	Annual Rates per 1,000 Living.			Deaths under One Year to 1,000 Births.
	Births.	Deaths.		
		Crude.	Corrected.*	
England and Wales...	24.4	14.6	14.6	130
77 great towns including London	25.6	15.5	16.4	140
136 smaller towns ...	23.4	13.8	14.4	133
England and Wales, less the 213 towns	23.4	13.9	13.1	118
London	25.0	15.0	15.8	128

* The corrected death-rates are the rates which would have been recorded had the age and sex constitution of the populations of the several areas been identical with that of England and Wales as enumerated in 1901.

Medical News.

THE anniversary dinner of the Medical Society of London will be held at the Whitehall Rooms, Hôtel Métropole, on Wednesday, March 6th.

THE electro-medical business of Messrs. Newton and Co. will in future be carried on by the firm of Newton and Wright at 72, Wigmore Street, London, W.

WE are informed by the Jeyes' Sanitary Compounds Company Ltd., 64, Cannon Street, E.C., that Dr. E. Klein, M.D., F.R.S., has accepted the appointment of Scientific Adviser to the Company.

THE King has granted to Dr. Charles Todd of the Public Health Department, Cairo, authority to accept and wear the Imperial Order of the Medjidieh of the Third Class, conferred upon him by the Khedive of Egypt in recognition of valuable services rendered by him.

A REUTER'S dispatch announces that a telegram has been received from Yambang, in the Abor country, stating that a cairn with an inscription stone was erected on January 24th at the spot on the banks of the Dihong river where Dr. Gregorson and his party were murdered by Abors last March.

THE arrival of the Orient liner *Otway*, the first steamer of that line to visit Toulon, thus establishing a sea route to the Riviera, was attended by some ceremony. The houses on the quay were decorated, and the Maritime Prefect, the Prefect of the Var, the Mayor of Toulon, and other officials were present. Speeches were delivered and toasts to the British Royal family and the President of the French Republic were drunk.

A CONFERENCE of representatives of 42 states, convened last November by the Office International d'Hygiène Publique has been sitting in Paris under the presidency of M. Camille Barrère, the French Ambassador in Rome. A new convention has now been signed by all the states represented making regulations with regard especially to plague, cholera, and yellow fever, supplementing the Paris convention of 1903.

THE ordinance for the institution of degrees in veterinary science promoted by the University of Edinburgh has received the sanction of the Crown, and will come into force at the beginning of the next summer session. The university is empowered by it to confer the degrees of B.Sc. and D.Sc. in veterinary science. It has been determined to erect new buildings for the Royal Dick Veterinary College, Edinburgh, and this alteration will no doubt contribute to make Edinburgh an important seat of veterinary education.

AT a recent inquest in Southwark the foreman of the jury complained that the present mortuary was "absolutely dangerous." The coroner, Dr. Waldo, expressed his agreement, as did Dr. Massie, formerly a councillor of the borough, who said he had to carry out *post-mortem* examinations with a tank weighing about a ton over his head, resting on a wall full of cracks. It appears that urgent complaints have been made for several years to the Public Health Committee, but the borough council has done nothing. We understand that there would be no difficulty in erecting a suitable mortuary immediately adjoining the coroner's court, which at present is half a mile from the mortuary. It seems quite clear that the borough council is under an obligation to take early steps to remedy the present dangerous and insanitary state of things, and that if it does not, it may presently claim the unenviable distinction of having not only a hidden cathedral but a buried pathologist.

THE monthly meeting of the Eugenics Education Society, at which Major Leonard Darwin presided, was held at the Grafton Galleries on January 18th, when an interesting discussion on the desirability of instructing children in matters of sexual hygiene was opened by the Rev. Mabel Irwin, of the American Society for Moral and Social Prophylaxis. Mrs. Irwin, who read a paper on American methods of introducing eugenic ideas into elementary schools, remarked that the introduction of eugenic teaching into the schools of any country had been and still was a work requiring almost superhuman efforts; and, though instruction in sex hygiene had been made compulsory in public schools of one of the Western States, and experiments were being made in the elementary schools of Chicago, they possessed as yet no satisfactory data as regards the results. The first and greatest of all difficulties was the attitude of the mothers, who would neither teach their children themselves nor allow others to instruct them in the pure facts of biology; and the first duty of the eugenists, therefore, was to overcome this opposition by teaching the parents the vital importance of proper instruction on matters of sex. For this purpose, classes for mothers were being organized in connexion with many American schools, where the mothers might learn from fully trained and qualified teachers how they themselves should instruct their little ones in the great mysteries of life's beginnings. Children, continued Mrs. Irwin, should be taught such things when they were very young, since experience had proved that the most irreparable mischief was usually done during the earliest years of life. Moreover boys and girls should receive exactly the same training in sexual matters; for in America it was beginning to be understood that a healthy race and a pure family life were alike impossible without chastity on both sides. The double standard of morality for men and women had received its death blow in America. In conclusion, Mrs. Irwin remarked that the future looked bright for eugenists in America. The United States already possessed fifty eugenic societies, and the gradual awakening of the American public to the truth of their teaching was strikingly testified by the success of a vast health exhibition recently held for the purpose of proving the dangers of an immoral life, an exhibition which would have been absolutely impossible in America even five years ago. An animated discussion followed Mrs. Irwin's speech, in which Mr. Cecil Chapman, the metropolitan magistrate, took a prominent part.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

MHOW wishes to know if a woman, aged 35, who was successfully operated upon for cancer of the right breast (usual operation of extirpation of whole breast, axillary glands, etc.) fifteen months ago, and who is at present enjoying good health, should marry. She wishes to do so, but not unless she has his consent.

A PLATTER OF SALT.

A. Z. writes: It is a common practice among the humbler classes to place on the breast of a corpse a heap of salt in a platter. What was the origin of this custom?

A FREE-MARTIN (?)

DR. GEO. ELIOT, M.R.C.S. (Grenfell, Sask., Canada), writes: I would like to ask Mr. Lawrie McGavin whether the case No. 50 reported by him in the issue of December 23rd, 1911, under "Abdominal Section Under Spinal Analgesia," was a twin? I am assuming that he took the subject for a woman until the autopsy showed otherwise. Should she prove to have been a twin, it would be interesting could one get a description of the generative organs of the other twin. Is not this a case of twins, not externally malformed, that have been nourished by the same placenta and situate in the same chorion, amongst which we may most naturally look for the human homologue of the "free-martin"?

ANSWERS.

DR. J. SMEDLEY BODEN (Muswell Hill) writes: In reply to "D. B. W.," I should consider, from the account given, that the most likely explanation of his patient's symptoms is that she suffers from eyestrain, the result of some refractive error, the correction of which, after use of a mydriatic, would most likely lead to a cessation of her headaches. For the relief of the headaches—if eyestrain is the cause—I find nothing better than a cachet containing 8 grains of phenacetin and 2 grains of caffeine citrate, taken with some fluid, followed by twenty minutes' rest in a semi-recumbent position.

DR. DOUGLAS FRESHWATER (London, W.) writes: In reply to "Hirsute," hair bleaching by means of hydrogen peroxide is a comparatively simple matter. It is important that the part should be previously cleaned with ether or some fat-removing solution, in order that the peroxide may act directly on the hair shafts. A 10 to 20 vols. solution may be employed; the stronger will blister if left on the skin longer than a few minutes. Once the hairs are bleached, it is a simple matter to keep them so by frequent applications for a few minutes while dressing. The employment of peroxide has the added advantage of rendering the hairs brittle, so that they frequently break off. Another method is the use of pernatrol soap, during the employment of which hydrogen peroxide is set free. For the permanent removal of hair electrolysis is the only effective method. I never recommend the employment of depilatories or *x* rays.

URIC ACID.—Acidum acetyl salicylicum cannot be advantageously given in solution as its solubility in water is 1 in 400; it can be made soluble by converting it into one of its salt, for example, the sodium salt, but the addition of caustic or carbonated alkali to do this would sooner or later result in the hydrolysis of the acid and the production of sodium acetate and sodium salicylate. A very sightly mixture or suspension can be produced with a small quantity of tragacanth mucilage; about 90 minims should be used for the suspension to 10 grains of the drug in ½ oz. of water. Mr. W. H. Martindale, who has given us some of the above information, states that in a mixture of this kind the acid remains for the most part unchanged, though even with plain water he has detected distinct splitting up of the acid if kept with the water for a few hours at 37° C. The mixture may be flavoured in any way that is preferred, but Mr. Martindale has sent us a sample made up with 5ss of glyl rosoe, this being the name of a preparation recommended in the *Extra Pharmacopoeia* made by flavouring glycerine with an essential oil.

EVIDENCE OF MASTURBATION.

EXPERIENCED WITNESS writes: One can only expect to give negative evidence in such a matter. Point out that if Mr.—— had this *habit* the usual signs—sweating of the palms, nervousness, avoidance of society, and possibly local indications—would have been observed, which they were not. The evidence should be very guarded, because a witness might be placed in the box who might say "he had repeatedly seen him do it."

LETTERS, NOTES, ETC.

"IN THE VALLEY OF VISION."

DR. G. M. IRVINE (Mount Norris, co. Armagh) writes: May I say a few words in defence of a book reviewed in your last issue? Being the author of *In the Valley of Vision* I am interested in the review output of the press regarding it.

I do not mind being called an ardent votary of telepathy; those who know me best know best how little truth there is in the imputation. I did think it possible that some one of the reviewers might recognize the fact that the work is nothing less nor more than a travesty of telepathy, and that one I fondly hoped would be the reviewer for a medical journal.

My pictures are those generated by the brain disordered by disease; the pictures of telepathy, which takes itself overseriously, are the products of a normally ill-regulated and uncivilized brain. The dream mind, the delirious mind, and the mind of the telepathist present strong analogies, inquiry into which would produce results valuable in proportion to the difficulty of finding an effective method of investigation. If the pictures in my book are true representations of mind activity during the delirium of disease, your reviewer has recognized a close analogy, inasmuch as he has so far mistaken my meaning as to rank me among the "ardent votaries of telepathy." Whether or not my representations are true must be left to the decision of those practitioners who have the opportunity of observing the phenomena in question.

THE VARIETIES AND TREATMENT OF ASTHMA.

DR. ALEXANDER FRANCIS (London) writes: It is not surprising that there should be such diversity of opinion with regard to the causation of asthma, when we are not agreed upon facts which can be definitely proved. Dr. Gibson stated (BRITISH MEDICAL JOURNAL, October 7th, 1911) that in only 1 case in his wards during the last five years did the blood pressure reach even a moderate degree, namely, 140 mm. systolic, in a man of 50. Dr. James Adam (BRITISH MEDICAL JOURNAL, January 13th, 1912), in fifteen years, has found only 2 cases with high blood pressure, and both had slight albuminuria. I have found (BRITISH MEDICAL JOURNAL, November 11th, 1911) that in my last 100 cases of asthma 23 had a pressure of 145 or higher, 74 had a pressure of 125 or higher, while in only 18 per cent. was the pressure below 120. This question of blood pressure may seem only a trivial matter, but I am convinced that it has a most important bearing, not only upon the causation of asthma, but even more upon prognosis. With a normal nasal mucous membrane and a high blood pressure, not due to renal disease or arterio-sclerosis, the prognosis in asthma, however long-standing or severe, is distinctly good Possibly Dr. Gibson's and Dr. Adam's cases refer to poorly-fed hospital patients; but, as far as I can see, the question of food and high pressure is but little understood. Dr. Adam says that the striking lack of high pressure among asthmatics is not astonishing. "The typical asthmatic is not a 'beefy' man, but a lean, sallow, poisoned-looking creature" (BRITISH MEDICAL JOURNAL, January 13th, 1912). Contrary to all tradition though it may be, I am convinced that if blood pressure were systematically taken, the greater number of high pressures would be found among the latter class. It may be that blood pressures rule lower north of the Tweed, but this is not borne out by cases I have seen from Scotland. As an instance, I saw a man from Glasgow on September 26th, 1910, who had bad asthma which had troubled him more or less for twenty-five years. His blood pressure was 200 mm. systolic, but he had no albuminuria. I reduced it at once to 180 mm., and on October 18th, when I saw him again, his pressure was 178, and it came down to 165. When I last saw him, on November 13th, 1911, nearly fourteen months after his first visit, his pressure was 155, and it came down to 140. The improvement in his condition had been immense. This case is typical of many, and tends to show that Dr. Watson-Williams's remark that the effect of nasal cauterization upon the blood pressure is only transient (BRITISH MEDICAL JOURNAL, November 25th, 1911) has no more foundation in fact than his statement that "the most hopeful cases for intranasal treatment are those in which mucous polypi are found" (*Diseases of the Respiratory Tract*, fourth edition, p. 357). I should like to emphasize the fact that it is not in the reduction of the pressure that the virtue of cauterization lies, but in its power of "stabilizing" the vasomotor centre. This is more easily effected in high than in low pressures, and luckily in my experience the majority of asthmatics have a high pressure without any nasal lesion.

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